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PENNSYLVANIA
Angler



January 1959

Whimsy

. . . If Mother Nature Bowed Her Head to Man, Would She Be Proud to Say—

Years, ago, when I was about to surrender to Forest Fire, my ancient foe, you came to my aid. Together we held and are holding this enemy in check. Because you were alert, and inventive, and farsighted, my forests are once more green. Because of your forestry practices in general, they are once more productive. For this I thank you, Man. Your growing interest in the recreational values of these forests pleases me. Not so long ago you thought of them only in terms of saw logs.

Through your efforts, many of my streams were planted with trout where no trout lived before. My rivers and lakes you supplied with fish and you improved their “habitat” as you call it. To my fields you added pheasants, cottontails and other small game. Your wisdom in attempting to keep my deer herd in balance with its range has spared me embarrassment, and heartaches too, I must confess. Again, I thank you.

You have seen fit to set aside thousands of acres of my land and water for just plain enjoyment. I like this.

Though I know it was your own enjoyment you were thinking of, I am pleased nevertheless.

Laws you enact in my behalf are a constant reassurance to me. By these laws you protect my creatures, my plants, my minerals. I am pleased too, by the way you enforce these laws.

Your attempts to understand me evoke a chuckle now and then, but you are making progress. Your probing of my inner thoughts is not at all disturbing. I rather like it. Keep up this good work—or should I say, “research,”—and we will understand each other a little better because of it. When we do I shall be truly grateful.

Yes, I thank you, Man, for many things—*Mich. Conservation*

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THE COVER: Ice Fishing on Beaver Dam in Sullivan County

Photo by Johnny Nicklas

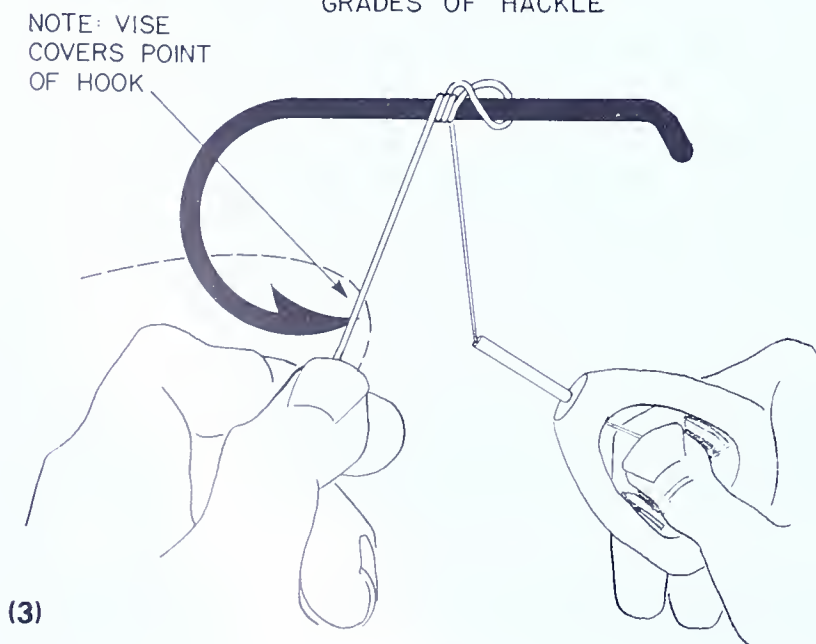
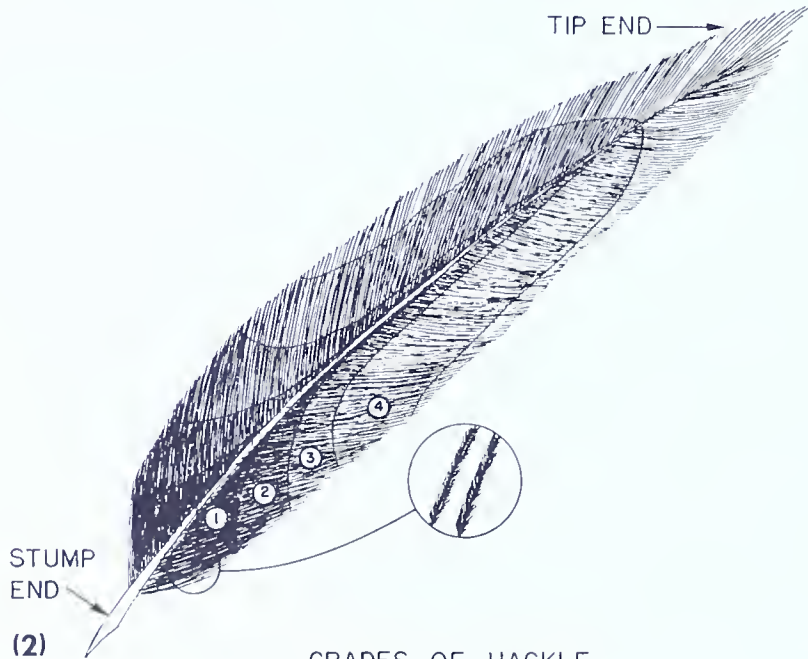
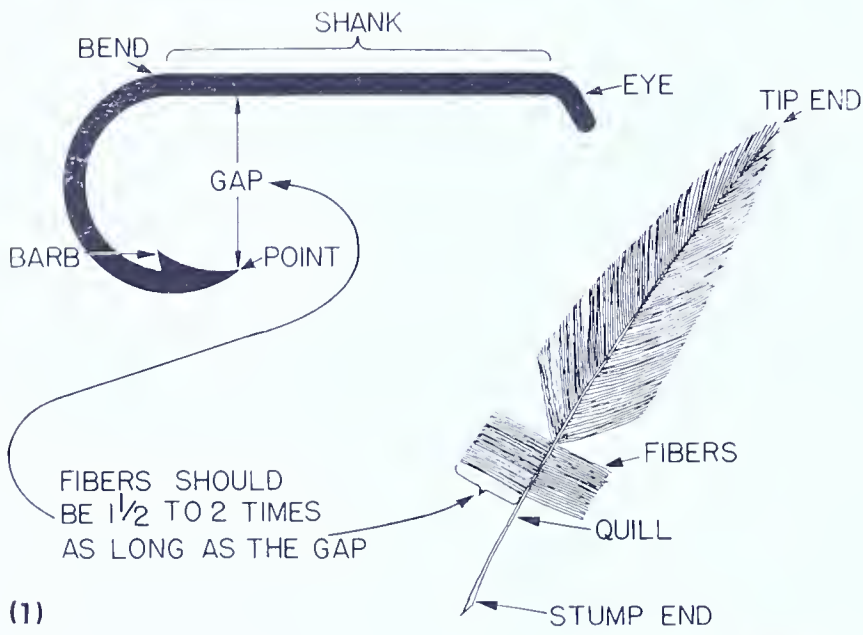
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Fly Tying

... Via Simplified Methods



Part I of a series in *V Parts* originally published in the *PENNSYLVANIA ANGLER* in 1953.

By GEORGE W. HARVEY

Associate Professor, School of Physical Education and Athletics

The Pennsylvania State University

Mr. Harvey is well known to thousands of anglers throughout the state who have received expert instructions from him through extension courses in fly tying offered by Penn State to groups in communities on a state-wide program.

In Pennsylvania, thirty-five years ago, fly-tyers were just about as scarce as three pound brook trout today. The few professionals who knew anything about the art were so secretive that it was almost impossible to learn anything except what one could figure out for one's self. Today I suppose there are roughly twelve thousand enthusiastic tyers in our state.

Personally, I can think of no better hobby for a budding or accomplished trout fisherman than fly tying. The creative, artistic and personal enjoyment one derives from this hobby is sufficient in itself, but these are only part. This skill keeps us closely associated with angling during the off season and supplies a worthwhile and profitable recreation for our leisure time.

Surely the trout fisherman who is proficient at both angling and fly-tying will be much better prepared to meet the challenge of our heavily fished streams today.

Fly-tying, contrary to the belief of many, is quite simple to master. Some tyers become more proficient than others, but I have never had one student who could not tie flies well enough to take trout.

I take pride in being able to state that I believe I have taught more people to tie flies than has any other living individual. I have been teaching fly-tying continuously since 1934 and in this span have given instructions to well over 6000. This experience, plus what I have learned from others, has convinced me that "haste means waste" in so far as teaching fly tying is concerned. This series will be written with this in mind, hoping that beginners will find it

simple techniques easy to follow and master and that, by the time we have finished, will be taking trout on their own creations.

There are many little tricks in fly-tying every tyer picks up that to him seem best. However, many are quite difficult to describe verbally. I will only include those that can be seen diagrammatically or described well enough for the majority to understand easily.

The tools and materials for the fly-tyer are many. It is surprising how much can be accumulated in a very short time and how quickly all can be lost unless the proper precautions are taken against moths and beetles.

Space does not permit me to list all the materials that can be used, so I will list only the essential tools and common materials.

Tools:

(1) Vise, bobbin, scissors (preferably sharp pointed), hackle pliers, and dubbing needle. In addition (if the pocketbook permits) one could purchase a whip finisher, half-hitching tools, tweezers flat-nosed pliers and many other articles but these are not really necessary.

(2)

Materials:

Hooks—sizes No. 10, 12, 14, 16 in regular length shank or any other hooks that may be preferred. The sizes mentioned are the most popular. Most quality flies are tied on hollow point hooks having turned down tapered eyes. Since hooks are an expensive item, I suggest the beginner send for a material catalog from some supply house, then have someone who is experienced recommend the best for his needs.

(3) Tying silk—This is now mainly nylon. The beginner should have several sizes from No. 00 for bucktails and streamers to No. 000000 or No. 0000000 for smaller flies.

(4) Hackle: Both wet and dry fly quality in colors necessary for the patterns you will tie. There are dozens of colors and shades and all vary in quality. Ninety percent of all commercial flies are tied with the following colors: Brown, ginger, light ginger, grizzley, black and blue dun.

(5) Body materials: Silk floss, chenille, wool, spun fur, dubbing, peacock herl, quills, tinsel, etc.

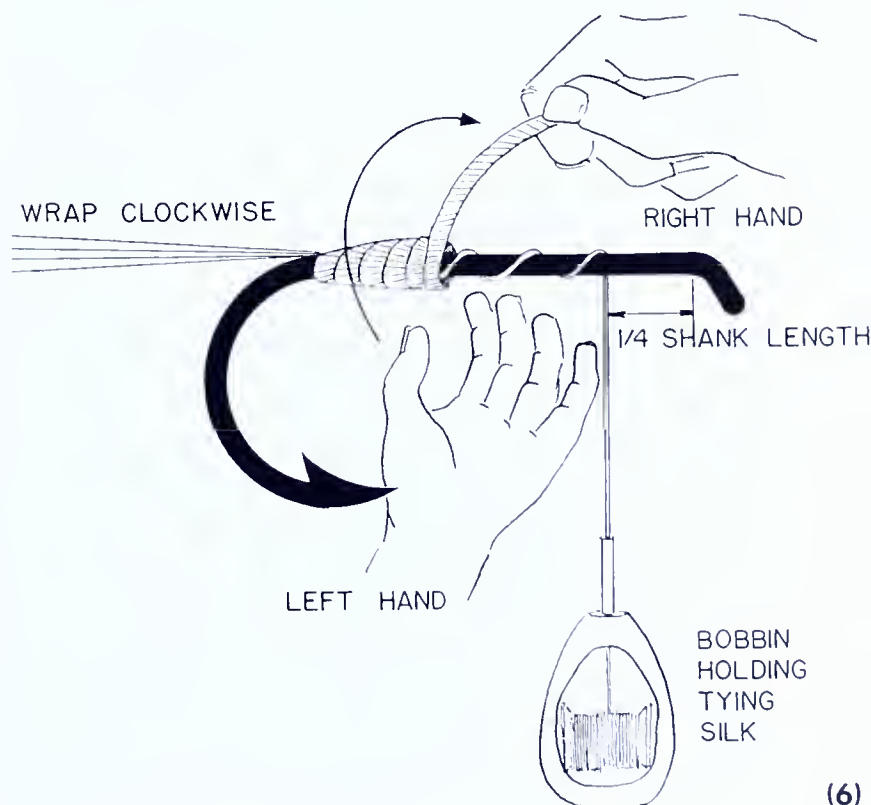
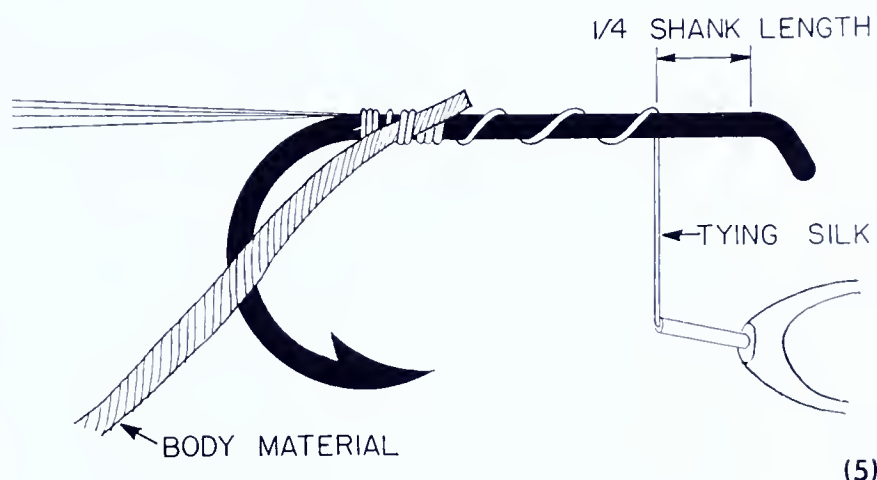
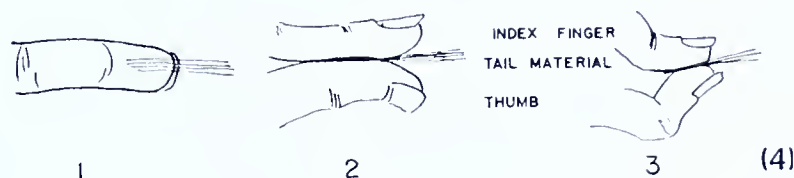
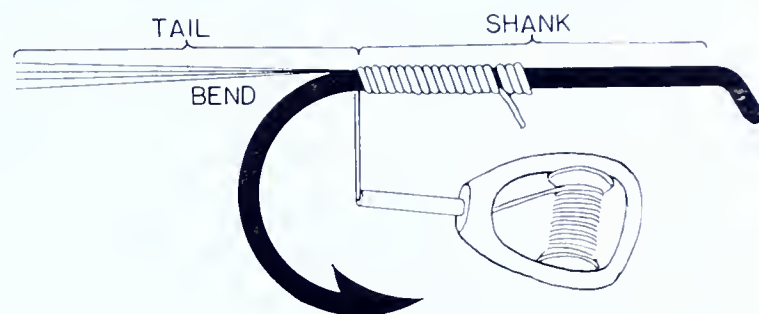
(6) Wing materials: Wing quills (from any bird) depending on colors. Duck quills are most frequently used, breast and side feathers from mallard, wood duck, teal, etc., deer hair, squirrel, badger, groundhog and many others.

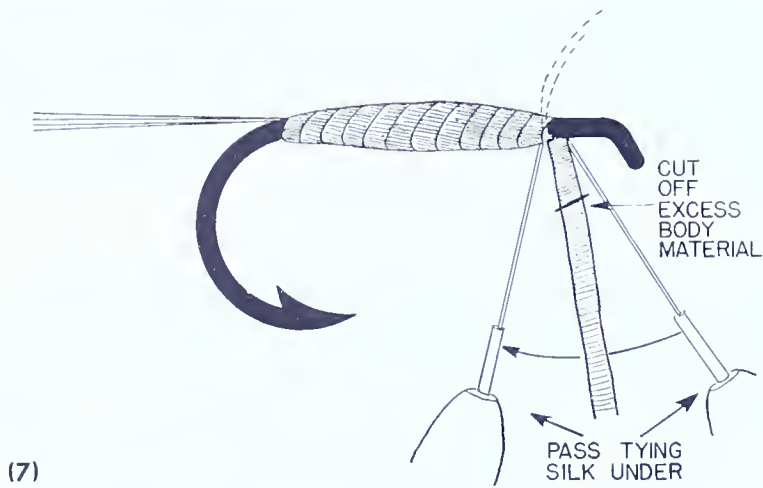
(7) Tails: Throat hackle is best for dry flies. Use material used for other type flies.

Illustrations by James M. Cartey under direct supervision of the author.

(8) Bucktails and streamer flies: Saddle hackle is used most frequently for feather wing streamers, however, neck hackles may be used. Deer tail hair is most commonly used on bucktails but any hair that is

TAIL SHOULD BE AS LONG AS SHANK OF HOOK





(7)

long enough and the desired color can be used.

(9) Lacquer: Finish off a fly with some waterproof lacquer, cement or varnish. A fast drying lacquer is most popular.

Let me repeat, this list is by no means complete but will be sufficient for any beginner. Remember, if you are a beginner, it is not necessary to have all the materials listed. Use what you have and add to your supply as you are able. A sample fly as a model would be a great help for the beginner.

Tying Hackle Wet Fly

Before the beginner starts to tie he should make a careful study of Diagrams No. 1 and No. 2. The hackle is the neck feather from fowl.

Diagram No. 1 shows the important parts of a hook and how to select hackle in relation to size of hook. For any regular fly, both wet and dry, this rule holds true. The hackle fibers should be from one and one-half to two times as long as the gap of the hook you are tying on. It is best to gauge the hackle by selecting fibers in the center third or middle of the hackle. The "bend" is the point where the hook starts its downward bend. The eye is at the front end and the bend at the rear of the hook.

Diagram No. 2 shows the various grades of hackle. Any feather from any bird, if the fibers are long or short enough for the hook size you are tying on, can be used for wet fly hackle. However, 90 percent of all dry flies are tied from cocks' hackle. Here we want a hackle that is long (from tip to stump end) with short, stiff, glossy fibers that have a minimum amount of down or webbing. If you take any cock's hackle and hold it against a contrasting background, you can easily see the webbing on the fiber. This is illustrated by the small circle in diagram. You can now compare the hackle with the one in diagram. If the hackle only has a small dense area of down near the stump end as illustrated by (1) and the rest of the fibers are clear, you have super quality hackle; (2) and (3) are still very good quality hackle; (4) should only be used for wet flies unless no other is available.

Diagram No. 3. Hook should be placed in vise (represented by the dotted line) so the point of the hook is covered, allowing as much clearance between the top of the vise and shank of the hook as is possible. The tyer should be seated directly in front of the vise. Now we are ready to begin.

There are many different types of fly-tying bobbins. I like one that is light in weight so that the finest of tying silk will hold it when suspended.

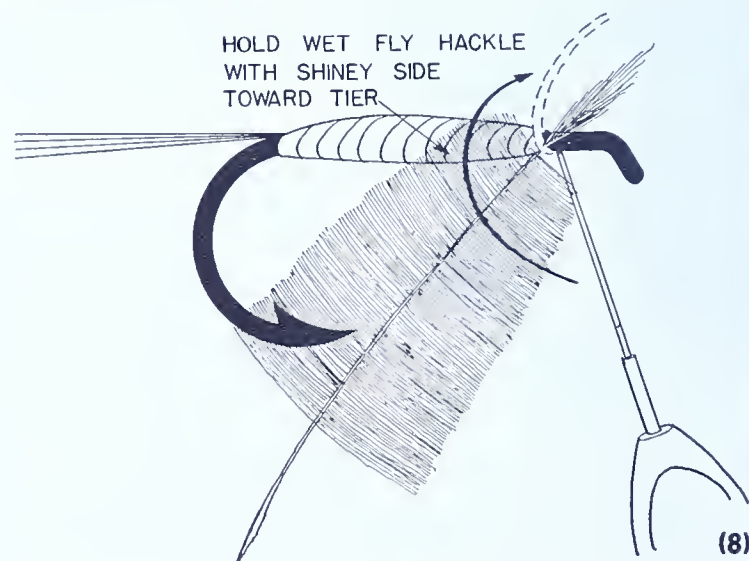
Note how this bobbin is held, thumb on spool and held by fingers. Never hold any bobbin back in palm of hand. I suggest the beginner start with 000 or 0000 tying silk.

All diagrams and descriptions will show the right handed tyer.

Take end of tying silk between thumb and first finger of left hand, holding bobbin in right and allowing about three inches of tying silk between bobbin and left hand. Now lay tying silk over top of hook. Start winding clockwise with bobbin hand, at center of hook making a few turns toward front of hook. Now, holding tying silk firmly, wind back over initial turns, continuing back to one-third the distance in front of bend. Cut off protruding end of tying silk. It would now be a good idea to turn to explanation of Diagram No. 10 and practice a few of the half hitches. If you wait until you are ready to finish the fly to learn this step you may find yourself in trouble.

Diagram No. 4. From a large hackle strip off four to six fibers for tail. Be sure to keep tip ends even. Remember, the tail should be as long as the shank of the hook. The small diagrams show how to hold the tail. 1 shows the position of tail on index finger, 2 shows how to hold so that ends of thumb and finger are even.

Tying silk should now be about one-third from bend of hook before you start to tie on the tail. Hold tail on top of hook so that fibers are flat on shank, with the ends of thumb and finger apart as in No. 2.



(8)

Now bring the tying silk up between the thumb and index material, back far enough so it can be held between the thumb and finger. Then over the top of the tail and shank of hook and down the other side between the tail and the index finger. Before you draw the tying silk up, close the thumb and finger as in 3. This should hold the tail secure on top of the shank of the hook. Make several more turns with tying silk as diagrammed being sure to hold tail directly on top of shank.

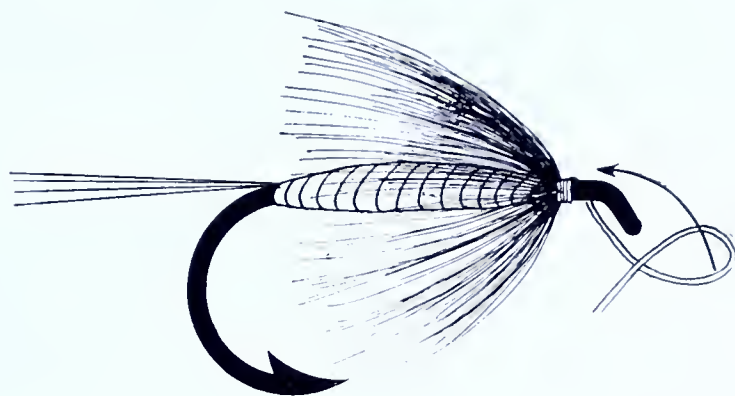
Diagram No. 5. Select body material. Single or untwisted silk floss or chenille is best for the beginner. Tie in the body material with a few turns of the tying silk just in front of tail, and continue winding tying silk up to one-fourth the length of the shank, back from the eye. Remember body material and all other material should be held, when tying, in the same manner as the fibers for tail were held.

Diagram No. 6. When winding on body material, to the right, use right hand to take material over the top of shank and the left to pick it up in under. If it is necessary to wind back to the left as may happen when building up body, reverse the above, using the left hand over the top and the right in under.

For the wet fly build a tapered body as shown by Diagram No. 6 and run body up to tying silk.

Diagram No. 7. When this step is reached you should be holding the body material between thumb and finger of the left hand. Now pass tying silk under body material and change hands, bobbin in the left, body material in the right. Wind tying silk over top of body material as shown by the dotted lines. Take several turns up as close to body as is possible. Now cut off excess body material. Be sure not to cut tying silk; beginners do this very thing quite often.

Diagram No. 8. Select wet fly hackle that has fibers the right length for the size hook you are using. Remember, the fibers should be one and one-half to two times as long as the gap of the hook. Hold by the tip end and stroke the fibers between the thumb



HALF-HITCH KNOT FINISHES OFF THE FLY

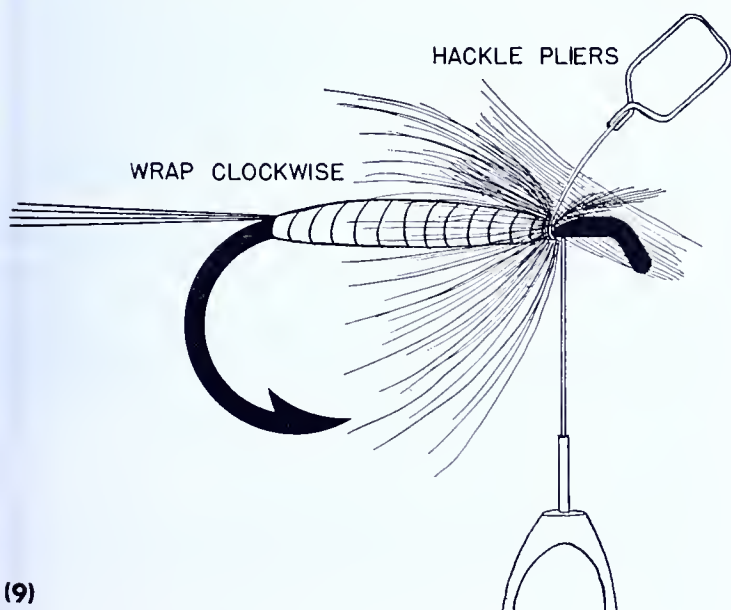
(10)

and index finger, working from tip toward the stump end. The purpose of this stroking is to make the fibers stand out perpendicular to the quill. Tie tip end of hackle close to body so that the top or shiny side of hackle is on top facing out. Take enough turns around top and so it will not pull out. Tying silk should now be almost up to the eye. Cut off protruding tip end. Grasp stump end of hackle with hackle pliers and start winding hackle around shank of hook. Make first turn as close to the body as is possible, keeping the flat and shiny side of hackle facing the eye of the hook. Three to five turns of the hackle is sufficient for any wet fly. When winding hackle, use hands in the same manner as when winding the body. As each turn of hackle is made, fibers should be stroked back. This can easily be accomplished by holding hackle pliers in right hand and using thumb and first two fingers to stroke hackle back. Now make next turn close in front and repeat.

Diagram No. 9. After three to five turns have been made, end with the hackle on top in right hand. Now hold in this position and bring tying silk up over in the same manner as used in securing the body. Cut off excess stump end and make enough additional turns so as to cover all visible material.

Diagram No. 10. We are now ready to finish the fly. This diagram shows the half hitch knot. Remember, now as in all operations, the tying silk must be held firmly so it will not unwrap.

I suggested earlier in Diagram No. 3 that you practice the half hitch. I will describe the knot. Hold bobbin in the left hand so about three inches of tying silk is between left hand and bobbin. Grasp tying silk between bobbin and hook, and close to body, with tips of index finger and thumb of right hand, and with nail of index finger facing you. Holding tying silk secure in right hand and slackening silk from bobbin hand, make a half turn clockwise with right hand dropping loop formed over eye of hook. Three half hitches are usually sufficient. Be sure each is drawn tight. Later on I will describe the whip finish. Complete the fly with drop of lacquer on head.



(9)

RESEARCH, about ready to pay off again!
This time with

“Fish In A Barrel”

By C. ROBERT GLOVER, Chief
Conservation Education Division

By the time the next generation of trout presents itself in the hatcheries of the Pennsylvania Fish Commission, the prospects are high that a new type of accommodation will be awaiting some of them. It's conditional only on the perfection of a more efficient means to maintain a constantly clean facility.

And when it happens it will be “fish in a barrel.” Trout, no less. And not for shootin’. But to be reared.

The procedure will become the Pennsylvania Fish Commission's answer, in one fell swoop, to several problems that have bedeviled hatchery men all through the years during which trout culture was developing into the tremendous industry it is today.

To be specific, one of the major problems in point is the requirement for a great amount of floor space in a building specially constructed as to its provisions for heat and light, to accommodate the troughs held to be necessary during the hatching and early fry stages of trout. All the more galling has been the fact that these buildings and fixtures, by the nature of their construction, can be used for nothing else in hatchery procedures during the many months after each yearly crop outgrows the close confines of the troughs.

And a lot of head scratching, to no avail, likewise has been devoted to possible ways in which the vertical space in these buildings might be used. Troughs in tiers have been considered, but the obvious barrier to this resort is the difficulty they would present to those charged with the cleaning and feeding details.

It all adds up to this: how to bring more trout through the fry and early fingerling stages in less space, with a lesser supply of water, a more efficient means of feeding and food utilization, meanwhile attain the same or, better still, improved growth and survival rates.

If what the Fish Commission now has in the mill proves to be the solution to all this, it will have been no accident. However, like many of the so-called miracle products we enjoy today, the idea was laboratory-spawned during research aimed in a different direction.

In this case, the laboratory site was the Benner Spring Research Station. The aim of the parent re-



FISH IN A JAR, (inch long trout), part of another research project at the Benner Spring Station, that suggested the “Fish in a Barrel” project.

search was and still is unchanged and is another story not ready to be told.

The idea it suggested was first recognized by Keen Buss, in charge of fish culture research at Benner Spring. The fish-in-a-barrel bit was then developed to what now appears to be a successful and going procedure by Buss, Ray McCreary and Dixon Waite of the Station's staff. McCreary's and Waite's flares for gadgetry played an all important role.

In the course of the other aforementioned research work, it was found that more fingerling trout could be reared per unit of space in a hatching jar than by the

BATTERY OF rearing barrels (right) arrayed beside conventional hatchery trough. Note respective floor space requirements, yet one barrel accommodates as many trout fry as the trough unit. (Below) A second experimental barrel arrangement.



traditional method. It was also found that these jars were practically self-cleaning and trout held in them easier to feed.

While the jar was not seen practical for a production of trout that runs into millions, if the principal was applied to larger units . . . ?

And a new project got underway.

It's a long jump from a six quart glass jar to a fifty-five gallon oil drum. But the jump was made. The question of whether the fry would distribute themselves throughout the entire width or depth of the barrel was answered early. The brookies and rainbows did. Nobody knows why, and the fish won't say, and nobody cares. The brown trout babies, true to form, concentrated near the bottom. This becomes an independent problem that will be tackled later. Certainly it was not sufficient to halt the project.

Problems that occurred later on water circulation and turbulence or what-have-you and adequate food distribution and suspension were resolved in turn by two structural modifications. First, the flat bottom of

the drum was burned out and a cone-shaped bottom fabricated and welded in its place. This necessitated the attachment of legs to the barrel, a device which with variation served another purpose as will be described later.

Secondly, the water supply was piped down to within an inch or so of the apex of the cone.

As it was desired that the water run off the top, a small section along the top rim of the barrel was cut out and a lip welded around the opening. The usual screen was placed over the cut out section, to catch refuse, etc., and to prevent any escapes.

The barrel was then refilled with water and with free swimming fry. A constant water supply was maintained, the babies were fed and they thrived.

That one barrel, which took up no more than four square feet of floor space, proved to be capable of carrying approximately the same number of fry as the conventional trough which requires some fifteen square feet of space.

The next step was to replace a trough with a row of barrels. Space allowed for six barrels which, in a line, exceeded the length of the trough by only 18 inches. Two arrangement ideas were tried, one with the barrels on the same level, each with its own water supply, all emptying into a common gutter.

The second arrangement employed different lengths of legs on the barrels as mentioned earlier. In this one, however, there was a single supply of water with one barrel emptying into the next, picking up a bit of oxygen on the way. The legs of barrel No. 2 in the line were made a few inches shorter than barrel No. 1, and so on down the battery of six barrels.

And, instead of the water being tapped from the water line and piped down the center of each barrel, in this setup the water runs off the top of one barrel onto its lip and flows to the bottom of the next through a drainpipe attached to the lip's underside.

Each arrangement proved equally successful, but the second required a bit less space and was felt to be a simpler design, requiring less maintenance and easier to work with. It's also noteworthy that at a time when a fifteen gallon per minute flow keeps fish happy in the battery of six barrels, thirty gallons is needed for an equal number of fish in troughs. This means in addition to a six to one space saving ratio, barrel culture cuts the water need in half.

The advantages in relation to space and water are only the beginning. Labor saving enters the picture. With the same number of steps, a man will attend 48,000 trout fry instead of the 8,000 normally retained in one trough.

Also, under the heading of labor saving will be the curtailment of the numerous hauls of fry from one hatchery to another. Not all of the stations of the Fish Commission have trough facilities that are up to supplying their respective rearing pond capacities. The installation of successful fry-rearing barrel facilities at all the hatcheries would correct that situation.

It also has been found that the survival rate is

higher in the barrels and food is more fully utilized. Further, it has been learned that the youngsters can be held longer and to greater size in them. The trough method finds their occupants needing more than its four-inch water depth at a relatively early date. Unfortunately, at that time the outdoor hatchery ponds are still crowded with adults, as the annual stocking program is barely underway. This means crowding in the troughs, even when previously unused troughs are pressed into service.

The thinning out of the troughs constitutes another time of handling, which in addition to the manpower need, is an added risk to the delicate fry. And oft times, as is prone to happen in any population whether it be fish, animal or otherwise, overcrowding breeds disease

that can result in epidemics.

Thus, the barrels can mean that more young fish may be held in the hatchery building for a longer period of time and under closer surveillance during the period when they are most subject to disease and mishap. And if disease does occur, it can be dealt with more easily and effectively in such confinement than in the expanse of a pond.

So, as things now stand, it's very likely that in the not too distant future, aside from the saving this new hatchery procedure would reflect in the license dollar, when difficulty in catching trout is encountered, it may well be of consolation to recall that some of the elusive critters may not always have things their own way either. At one time, they may have been "fish in a barrel."

WHAT IS RESEARCH?

"Research" is a high-hat word that scares a lot of people. It needn't. It is rather simple. Essentially, it is nothing but a state of mind—a friendly, welcoming attitude toward change. Going out to look for a change instead of waiting for it to come. Research, for practical men, is an effort to do things better and not to be caught asleep at the switch. A research state of mind can apply to anything; personal affairs or any kind of business, big or little. It is the problem-solving mind as contrasted with the let-well-enough-alone mind. It is the composer mind instead of the fiddler mind. It is the "tomorrow" mind instead of the "yesterday" mind.

Charles Kettering

(Editors note—Few men have been better qualified to comment on the merits of research and evaluate its need and contributions to modern society than the late Charles Franklin "Boss" Kettering, scholar, engineer, scientist, inventor, manufacturer, executive and consultant.)



CLOSE-UP of conical bottom welded to the barrel. This was found to create better water circulation and turbulence within the barrel than the flat bottom it replaced. Valve permits quick and easy removal of fine refuse which settles in the apex of the cone.



CLOSE-UP of "fish in a barrel."

Things We Should'a Done Last Season . . .

that might have caught more fish

By RAY OVINGTON

I thoroughly disagree with the theory that to catch fish your line and lure must be in the water. It does not always make sense. In fact it makes littler and littler sense as I try to evolve as a hopefully successful fisherman. I find that I catch more fish when the line is NOT in the water.

Lest you think that the heat or something has gotten this writer and likewise the editor of this magazine, let me explain.

We fish much too much and much too hard. I mean, that we have a tendency to cast and cast here, there and everywhere with the subconscious thought that the percentage will be with us.

Take last season as just a for instance. Let's go through a part of it together. We couldn't wait to get into the water. We hardly looked at the stretch of stream to first ascertain where the fish were, and what our angle of approach should be. We just waded in and started to cast. Chances are that the very place where we entered the stream was a hot spot that we ruined for ourselves and others coming by that same day. When we finished, we worked the easy water to wade, not necessarily the water where there would be better chances of taking fish. That is what most of us do, thank goodness, say the experts, because it leaves the remainder of the stream to the smart anglers who catch fish while we stand with our jaws dropped in amazement. We are magnetized by the spots where the fly looks good on the water and where it will not become snagged.

But to go back.

Our approach to the stream was as subtle as a brick and sent the trout scurrying to midstream where in the fast current the only place for any relative safety was the very bottom behind a rock where they would stay until the onslaught was over. No wonder, we ponder, that the big fish feed only at night when the anglers are playing cards or attending to the usual householder duties.

So to carry our trip a step further, now that we have scared the trout in the immediate vicinity we start to cast all over the place. Spinfishermen are adepts at this sort of indiscriminate raking of the water. We see no signs of feeding fish in the stretch of water mainly because we are so intent in working the rig and trying

out a new lure and to see how it works in the water. Had we paused even for a second to look we just might have seen the tiny dimple ring caused by a may-fly being sucked under by the maw of a monster. So, we chuck and chuck, landing the lures and flies all over the place, following the ideas pounded into us by the angling scribes since Izaak Walton. Sure, we fish in convention, dry flies upstream, wets across and down and the nymphs down the bucktails in short jerks down and across, just like the writers say. We catch some



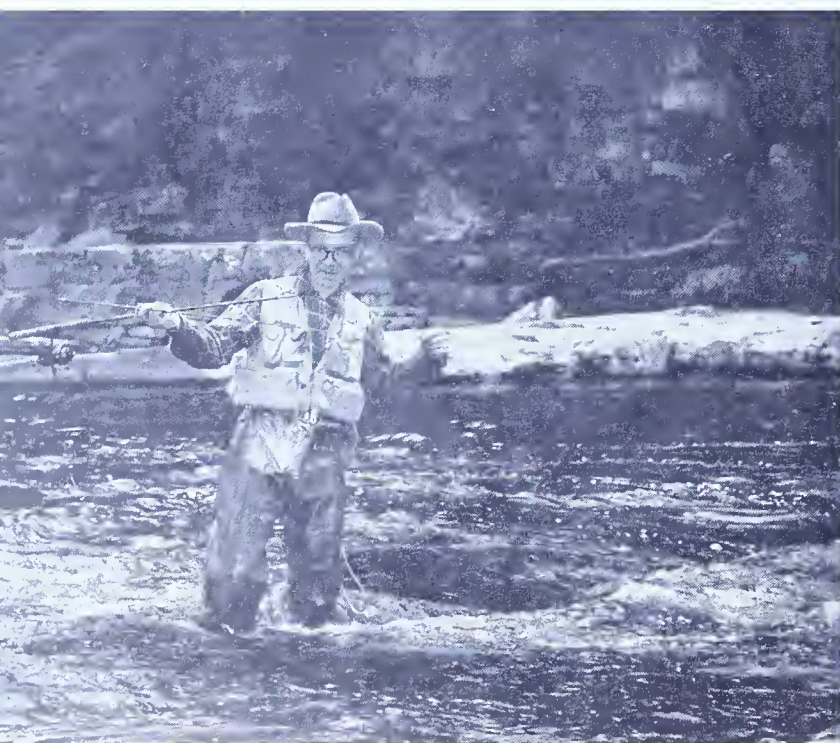
WE WILL Figure Out Where To Go, Rather Than Just Plow In.

fish and without really thinking, decide that we know just as much as any authority. When the activity of feeding fish comes off, we take more trout thinking it is our skill rather than the careless abandon of hungry trout that fill the creel. We forget that almost anyone can take fish when they are rising freely.

The season and others before it we fished dries when we felt like it. We tied on wets when the spirit

moved or we dragged weighted nymphs . . . all with not a bit of actual sense based on any kind of observation. We tried out lures and techniques on the fish instead of adopting ways and means to fit the situation of the moment, figuring that the fish should follow our thinking rather than our following the fish's thinking. Even then, the Gods were cooperative and we caught fish enough to exercise the camera lens, smoke up the pan and make for story material at the club meetings.

Many times we fished with unbalanced tackle thinking that we could get away with it and more than once we threatened to change the leader along with the flies in order to get more distance. Always, we hated to take the time away from the casting and romping merrily about. We realized too late many times that had we switched and balanced our gear we could have reached the run on the other side of the stream and its feeding trout. As we look back the trout over there under the overhanging hemlock would have been as good as dead. But in our anxiety we missed the chance at him all together.



THE TROUT Go Scurrying To Midstream For Safety Behind A Rock Where They Remain Until The Onslaught Is Over.

We all know about wading, how it should be done . . . carefully, quietly so as not to scare the fish, but we found ourselves wading carelessly, being tuned to the quarry rather than the perfected approach to it. So we put fish down as a consequence.

We fished with veritably closed eyes. While we looked at the water we were casting over we failed to see the action of the feeding fish under the surface and missed by a country mile the right presentation of the right type of lure. We watched the fish "rising" and so switched to dry flies when, had we actually used our eyes we would have seen that the fish were

feeding on nymphs that were ascending to hatch and that the action we were witnessing was merely the follow through of their body roll as they grabbed mouthfuls of succulent nymphs.

An angler below us was taking fish consistently all morning and despite the fact that we were in good water and working upstream from him, we didn't think of taking five minutes to watch him and find out how he was doing it. No! We were too anxious to keep the lure in the water and concentrate on casting and switching lures and techniques in the hope that one of them would bring results.

At times during the year, we let our frantic zeal overcome any sense that might have prevailed. While using a 3x leader with #'s six to 12 flies, we wanted to switch to 14's or 16's but failed to change to the lighter leader. Or perhaps we were using a 5X leader with the tiny dry fly and suddenly deciding to change to a bucktail we lazily tied it to the frail tippet and despite the fact that we knew it would handle abominably in the air, cast it anyway, wondering why we could not get distance or manipulate it properly, or why it snapped off on the backcast. We even got sloppy about falsecasting our dry flies and as a result they looked like anything but a high riding insect on the water. Sometimes we were too casual about the way we tied and set our knots and wondered why the fish had broken the leader.

Now mind you, none of these things were done consciously!

All these and many more can be remembered, things, events, happenings, which robbed us of the contemplative recreation that proper trout fishing is in its prime state. Undoubtably they robbed us of net results.

In retrospect, then, we resolve, now that the season is over, to make a few internal changes in our role as the fisherman, comes next season. Even if the improvement nets us no more fish, it will bring us more pleasure from them, and even from the absence of luck in terms of dead fish.

So we resolve to look over the water before we enter it, and try in many cases to cast and work from the shore before entering and so not spoil the immediate vicinity. Take your fly rod out behind the garage and with your back to the structure learn to execute the roll cast so that you can fish well from the bank of the stream (a "for instance").

On approaching our pet pool we will view the entire stretch and plan our course of action so that we can get the most from a given stretch with a minimum of wading activity and also to chart the spots which can be fished in sequence without the necessity of backtracking. We will also figure it so that we can, by

esting the water instead of constantly pounding it, and areas that we can fish by alternating the casts. We'll check with the others on the stream either with the usual "any luck" query or by watching them out of the corner of our eye. This in great measure will help us to a point of procedural departure. Given a particular stretch of water we will study it before making a decision as to technique or fly type. On our decision, chances are, our creel will later be weighted. At least we will not be fishing blind, a way" which is anything but convincing and subject to change without notice, or reason.

Lastly, we will be more perfection conscious in our operation which includes the way we balance our tackle for the specific requirements of the moment and we will take the time to get set properly so that when the great test comes we will not only be in a position to make the trout rise but will be able to fight him without that horrible feeling in the pit of the stomach that the leader was not tied properly or that the knot holding the fly is not secure.

Conservation Across the Nation

DuPont Plans Pollution Control

Early in New Operation

The duPont de Nemours Company is displaying a heartening example of an industry's concern for public recreational opportunities, during the construction of a new \$30 million titanium plant which will go in operation next spring at New Johnsonville on huge Kentucky Lake, downstream impoundment on the Tennessee River.

Three years ago, when a decision was reached to construct the plant, duPont initiated a series of six scientific studies of aquatic life and water conditions there with particular emphasis upon fish and the organisms upon which they feed. When studies are completed before the plant begins operation, the knowledge gained will enable duPont to quickly detect any change resulting from operations of the plant.

Plans to remove water-borne wastes prior to discharge back into Kentucky Lake already have been approved by the Tennessee Pollution Control Board.

"Conservation News"

Fishniks Ahead

Dr. G. L. Kesteven, Chief, Biology Branch, Fisheries Division, United Nations Food and Agriculture Organization, is quoted on the status of Russian fisheries research in *TRADE NEWS* (Department of Fisheries of Canada, Ottawa). He reports that Russia has about 50 groups employing thousands of people working on fisheries research, and that the staff of the All Union Institute of Research in Marine Fisheries and Oceanography alone amounts to 500 persons.

If we're not careful the U.S.S.R. will be coming up with a big series of Fishniks—ahead of us again.

Sport Fishing Institute "Bulletin"

In plain English, we will fish rather than cast and figure out where to go rather than just plow in. Each attempt whether successful or not will be based on a strategy rather than a mere physical and gymnastic demonstration of our undirected and questionable skill. They say that successful technique is knowing and planning what to do as well as the actual manifestation of the act. So be it for next season.

I have attempted to present at least a partial coverage of the things we didn't do last season or did wrongly. From these as a mental springboard you have probably been thinking of a host of similar and familiar things you didn't do or did wrongly. Perhaps we'll both go to the stream a bit wiser comes opening day. It will be interesting to see, however, after a few months of winter privation, just how much of this cool strategy will remain in our consciousness when that great first day comes and we are anxious to wet the boots and throw the lures. I'll be watching you and I bet you'll be watching me.

ORRR Commission Used As Opposition Tool

A favorite argument, repeated by opposition witnesses, was that wilderness legislation should be delayed until the new Outdoor Recreation Resources Review Commission completes its study three years hence. It is now clear that some Congressional opponents of wilderness preservation supported the ORRR Act as a means of blocking the Wilderness Bill. This has been confirmed by the actions of Senators Watkins of Utah and Barrett of Wyoming, both opponents of the Wilderness Bill, who passed up the hearings in order to attend a recent meeting of the ORRR Commission in Washington. They worked for the ORRR bill and subsequently were appointed as Senate members of the Commission. At the meeting, they tried to get the new Commission to go on record opposing early enactment of the Wilderness Bill. They failed. Both were defeated for re-election and therefore must relinquish their posts on the ORRR Commission when their terms expire December 31.

"Conservation News"

New Access In California

The California Wildlife Conservation Board has three projects underway for sportsmen; all are located on the Sacramento River. All three include boat-launching ramps. Two of the ramps are to be built in Shasta County, one at Anderson and the other at Balls Ferry. The third will be built at Bend Bridge, Tehama County.

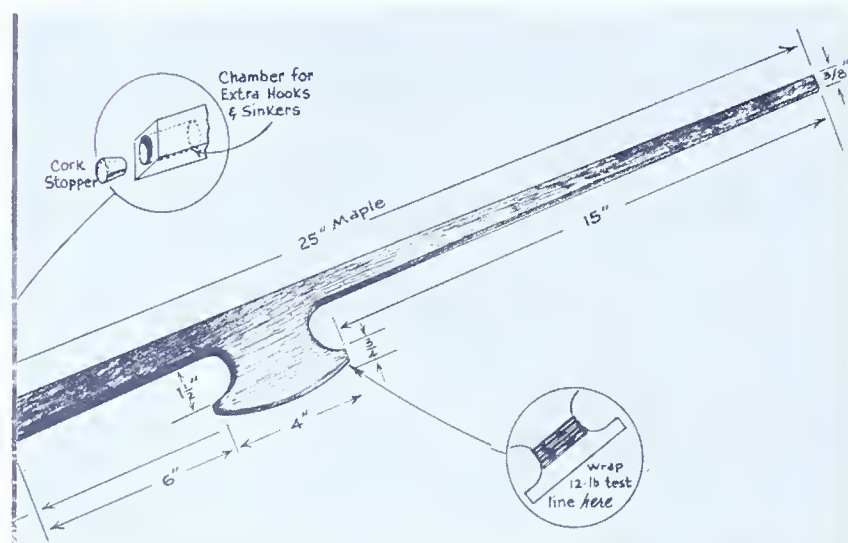
Use Fee For Boaters

In North Carolina, boaters must now buy a fishing license or an annual boat-launching permit costing \$4.10 to use any of the 35 access areas controlled by the Wildlife Resources Commission. The new regulation was adopted when it became evident that pleasure boaters were almost monopolizing some of the facilities which had been financed by license money.

Yellow Perch



FIRST JOB for the ice-fisherman is chopping a series of holes through the ice. A sharp chisel, welded to a length of water pipe, makes an ideal cutting tool.



THIS JIG-STICK is becoming popular in Pennsylvania. The rod is simply a long stick with provisions for storing line. Note hollow handle for hook storage.

THE ANGLER walks from one hole to another, jigging the lure in each for several minutes, to locate the schooled perch. When one perch is caught others generally follow in rapid succession.



Yellow Perch, striped with vertical bars of dark green across its body and trimmed with brilliant crimson fins, holds the attraction for cold weather fishermen. With the Christmas Holidays filed away these fishermen begin exploring the acres of pond ice for schools of colorful panfish.

In northern latitudes skims of ice form on ponds by late November. In Pennsylvania it occurs late December, though it takes several weeks of zero weather to make the ice heavy enough for safe walking. This season has arrived by this time, and it begins a long series of ice fishing outings that span the next several months. And it's exciting fishing!

True, many fishermen hold to the opinion that yellow perch are the least attractive member of the panfish crew. Frequently overpopulating small ponds, they frequently become stunted in growth. These small fish certainly do not offer the best in fresh water sport during the summer months. But in winter, it's a different story. The colorful perch bite readily on baits, flies and small spoons, enabling fishermen to have exciting moments pulling creels full through the ice holes. Colorful and firm and fat, the small gamesters are scrappy on jig rods. And it is a real winter treat to fry a plateful of golden brown "perch sticks" over a log fire and eat out-of-doors.

A SMALL SILVER or gold spoon is among the best jig-lures. This is used alone, or as an attractor when a baited hook is fastened below spoon.



ough The Ice

R

Equipment for this cold weather sport is a radical departure from the summer counterpart. Top on the list of accessories now is an ice chopper or spud. This tool is necessary to cut holes, six to eight inches in diameter, through the heavy plate of pond ice. Some anglers use an ax for this job, but a more efficient tool is a wide chisel welded to a length of water pipe.

Perch habitually travel in schools, so it is necessary to locate the roving bands. Jig-fishermen chop a series of holes across a likely cove and walk from one ice hole to another to track down the schooled fish. A small spoon, weighted streamer fly, bait or a combination of these are jigged for several minutes at each location. When the school is located, half a dozen or more can be pulled top side before it moves on.

The jig rod is the butt section of an old fly rod or the tip joint of a spinning rod fastened to a wooden handle. Becoming increasingly popular in Pennsylvania is the jig stick pictured here. One can be made from a piece of pine or oak material following the general outline in the accompanying sketch.

With this winter tackle and a pocketful of spoons or bait, the angler is well equipped to enjoy plenty of action and fun on these wintry days.

ENTIRE FAMILIES enjoy jig-fishing for perch. Families can fish in the same ice hole. When one perch is brought top side, another member of the family begins jigging in the same hole. In this way larger catches are made before school moves to new location.



WHEN PERCH are hitting, an hour's time can produce catches like this. It's far more fun than sitting home loafing near the hot stove.



PERCH scattered about on the ice soon freeze. There is no fish spoilage in this winter game.

SMALL GRUBS, such as those found in the galls of golden rod stems, are suitable baits for panfish. Fish eyes, removed from the fish that are caught, are also good baits for jigging.





What We've Been Saying Right Along!

photo by
W. Boyd Tobias

There's a lot of good fishing going begging in Pennsylvania's large rivers. And while it need not be the case, if fishermen would take the extra pains to get to it, the scarcity of convenient access is recognized as one of the reasons why relatively few do or can enjoy it.

Above is proof that the North Branch of the Susquehanna River is worth whatever extra pains a fisherman may take. It's also ample justification for the portion of the Fish Commission's program under the heading of access site acquisition and development. With facilities that will make it easier and more convenient to get to many stretches of all our big rivers and some lakes, especially for those not familiar with a particular river section, not only will fishing opportunity in Pennsylvania be extended, but fishing pressure on other waters will be relieved.

The catch pictured here consists of 11 smallmouth bass (only the tails of two are visible) and one walleye. The bass range from 13½" to 20½" in length, the largest—fifth from the right—weighing 4 lbs., 13 oz. The walleye measured 23½". Their friends are Gerald Kinsman, left, and Theodore Chicarilli, both of Towanda in Bradford County. The scene of their activity was the North Branch in the vicinity of North Towanda. The catch was made from an anchored boat. Time—a mid-November, 1958, afternoon. Bait—minnows. Tackle—spinning.

And according to fisherman Kinsman, though this was a fine catch, there have been others of equal proportion or nearly so.

And according to other reports from other anglers who work at it and know their respective rivers, similar catches are not uncommon on the lower Susquehanna in the vicinity of Harrisburg and downstream, on the Delaware River between Port Jervis and Portland, and on the Allegheny River between Warren and East Brady.—C. R. Glover

Re: Bass—Smallmouth and Striped in the Delaware River.

"After reading in the August ANGLER about the "stripers" that were caught in the Delaware River, I wish to report having taken two myself while trolling for walleye in the vicinity of Portland in early August.

"I wish to further comment on the smallmouth bass fishing in the Delaware this year. Never in my 30 years of fishing the river have I caught so many large ones, ranging from 15 to 17 inches, and many smaller ones as well. And I know of others who have done as well as I."

Harry Belter, Portland, Pa.

The Web of Life

Man Tampered, Then Discovered . . . Life Itself

By J. GREG SMITH

Editor, *Outdoor America*

The intricacies of a silvery spider's web, the unrelenting tide of an unrelenting ocean, the startling brilliance of a bolt of lightning, the quiet calm of a wilderness meadow, the effervescent colors of a piece of stone, the simple beauty of nature's newborn—these things have fascinated man down through the ages.

A stick, a stone, a trickle of water, all hold their mysteries. Eons ago man quizzically studied them. He handled them, felt them, fondled and tasted them. He even salaamed to them at one time or another because he could not completely understand them.

Nor could he understand himself. Why he must kill to eat, roam to drink, or seek out others to perpetuate his kind. The strange beat from within his chest intrigued him, and he often sought still places to listen to its reassuring rhythm.

He was a stalker, a hunter, not far removed from the animals he preyed upon. But as winds and water wear away mountains of stone, time wore upon man. He changed, subtly at first, more dramatically as time went by. His quizzical instinct that had tested his senses against the contours of a stone led to discoveries and he began to understand some of the earth's many mysteries. And always—whether he was conscious of it or not—he was discovering life.

He learned that there was power in water, strength in fire. He tried to conquer them because he was what he was—man. He tested, remembered, discovered, and learned from others—generation after generation—until he was master of all he surveyed.

Testing caused error, power prompted greed, and as a result what had been curiosity erupted into a destructive force that destroyed many of those things that had fascinated him. He was tampering with life and was consumed by the consequences of his curiosity.

Civilizations gained great heights, then faltered. Wastelands appeared where once there had been verdant green. Stone images, tall temples and artistic columns disappeared under the systematic sands of an earth betrayed. Man had discovered life's power, then destroyed it and in turn destroyed himself. But there were always others, rising to greater heights because they had remembered the errors of the past, then tumbled in dust because they had forgotten them.

The pattern of history has been built on the dust of these errors and each time man rises to greater heights than he had before. We are at that point now. Our technicians are far removed from those who quizzically studied the contours of a stone. They are still tampering, however, using the knowledge of those who had gone before and applying their own



THE AWESOME CUMULUS—a prelude to one of Nature's display of power.

advanced thinking to discover more of the earth's secrets. Some have learned from the experience of the past to respect the powers they are dealing with, knowing that what might seem dormant may mushroom into a cloud of destruction. Some haven't learned.

A word was born some fifty years ago and was

given meaning when man surveyed the damage he had caused. A word was born that became a conscience for those who had not learned. A word was born that meant life, that showed respect and gave dignity to the modern image of the free roaming predators of ages past. That word—conservation—became a cause.

Those who have come to live by its principles know what it means to reflect on the past, inquire about the present, and contemplate the future. They know that a spider's web the tides of an ocean, a bolt of lightning, and an effervescent stone all have their place in the scheme of things. They know that man is only a part of this pattern. They know that

man must often seek out those quiet places as he has done through the centuries, to listen to the reassuring rhythm of life that pounds within and around him.

Man must ever have the chance to discover what would seem to some very simple and basic facts. Discovery gives his life meaning, gives him humility and affords him a conscience. This cause wasn't born fifty years ago. It has been with us throughout time, lying latent or possibly camouflaged because it was called something else. Conservation is life. Conservation is respect. Conservation is reverence. And, if there is a cause, it is only to remind us of these facts.

The Big Catch



George Fordney, 107 N. Enola Dr., Enola, poses proudly with prize 28½-inch salmon taken on a June bug spinner from the Juniata River midway between Newport and Duncannon. The eight-pound, one-ounce fish went for a night crawler.

THERE'S NO COMPROMISE

Many of the hours devoted by fish wardens to game work, and by game wardens to cooperating with Fish Commission personnel, are in routine patrols and serve mainly to keep honest some who might otherwise fall to temptation, when the respective wardens are known to be occupied elsewhere. But not so all of the time Fish Warden Charles V. Long (Perry-Juniata counties district) lent to the cause of game during the past several months. He was part of a team consisting of game wardens and deputies, the Sheriff of Juniata county and his deputy, and a trio of State Policemen of the Lewistown Barracks, which after almost two years of surveillance, lowered the boom on a band of out-of-season deer killers in the south-central region of the state.

The roundup to date counted twelve of the ring who either admitted guilt and settled on the spot, or later pleaded guilty of possessing or killing deer out of season. From them, \$2,000 in fines was channeled into the Game Fund, while one of the number is currently serving out a 409 day stay in jail. And according to Jim Brown, Game Commission supervisor of the division, the case is not yet closed.

IT HAD TO HAPPEN

A release from UPI in *The New York Times* for September 28 reported that vending machines for dispensing live fishing worms are already in use in New York. The machines, illuminated and refrigerated, sell the worms for 50 cents a dozen. One of the "wormatics" sold 3,000 night crawlers over a recent weekend.

Fish Commission Employees Retire



Bernard Gill

Superintendent of the State Fish Hatchery at Tionesta, Mr. Gill retired on December 5, 1958, after some forty-three years with the Commission.

He was born at Pleasant Mount, Wayne County, and began service with the Fish Commission on November 29, 1915. After some 14 years employment at Pleasant Mount, Gill was elevated to superintendent of the Tionesta Hatchery in February, 1930, where he served until the time of his retirement.

During World War I, he served with the 312th Machine Gun Company, C. A. E. F. He will reside in Tionesta.



Winfield F. Call

Mr. Call was born in Clarion County, where he was an electrician and linesman for some twenty years. He began employment with the Fish Commission on March 2, 1936 and was a fish culturist at the Tionesta Hatchery until his retirement on December 5, 1958. He lives in Tionesta, Pa.



Wilfred F. Splitstone

Mr. Splitstone was born September 27, 1890, in Kinsman, Trumble County, Ohio, and attended school in Linesville, Pennsylvania. On March 25, 1942, he was employed as a fish culture assistant at the Linesville Hatchery in Crawford County, retiring on December 5, 1958. Mr. Splitstone lives in Linesville and has a son and a daughter living in the Linesville area.



James R. Grove

Mr. Grove was born in Tionesta where for many years he was employed as a driller in the local oil fields. A veteran of World War I, he served with the 209th Engineers. Grove was employed by the Pennsylvania Fish Commission on July 6, 1928, and became a fish culturist at the Tionesta Hatchery.

He retired on December 5, 1958, and plans to remain in Tionesta.

Three Fishing Secrets

By HERBERT ROBINSON

There are fishermen, who, upon finding an especially good fishing area, or a lure that produces exceptionally well, suddenly becomes as closed mouth as an atomic scientist.

I have a friend we will call Carl. I have fished with Carl in lakes, ponds, rivers, and runs, yet I have never gotten a very good look at his favorite lure. Its a surface bug, looking somewhat like a moth. Anytime I get close to him he removes it from his line. The lure is supposed to have been given to him by an old timer that made him swear to never show it to anyone.

Fishing secrets are common enough, taken lightly by some and more seriously by others.

However, some of these secrets are not secrets at all, but a knowledge of fish habits.

Most of the fishermen I have known who fall into the category of "The Lost" are expert woodsmen in general. They don't just hunt and fish in the "wilderness," but live there. What is more important, they have a knowledge of aquatic life and the environment they live in.

For the occasional fisherman, and the business man who has chosen the sport of fishing to fill those precious spare time hours, I will give some tips that should increase their luck.

More fish are caught per fisherman in the spring, than at any other time of the year. But, even spring fishing has its faults.

One of the important factors that controls spring fishing, is muddy water. Many a fishing trip has become a failure because thawing and spring rains have turned many rivers to a cream colored liquid. Yet, good fishing can be had if one is aware what the fish are doing.

Last spring, the North Fork of the Hughes River, in West Virginia, was a boiling mess of debris and water the color of butterscotch. It was about four feet above normal and almost ninety feet across.

Usually its but twenty feet wide with riffles and pools about four feet deep.

It had rained the night before very hard, which lasted until 5 A. M. the next day. Yet, in this impossible weather, I was out, flyrod in hand, anticipating a mess of fish.

I first visited the mouth of "Jug-handle Run." They

had been doing some timbering in the upper reaches of this run and it was a mess of sticks and mud. I wanted a clear swollen stream. My next stop was "Faggot Run" and it flowed through several miles of uncut timber land. The run was perfect. It was about 2 feet above normal and clear as spring water. The run flowed gently into the river forming a 20 foot clear pool in the otherwise muddy river.

Dark shapes could be seen moving in this water, and minnows struggled to get further up the run into shallow water.

I waded into the run upstream about 30 feet from its mouth and excitedly tied on a bucktail and spinner. I cast out into the muddy river and retrieved from the muddy water to the clear water of the run. My lure hadn't traveled more than a foot in the clear water when I got a strike.

It was a sixteen inch largemouth. I missed the next strike, but before I could retrieve for a new cast an 11 inch crappie took the lure. Two hours later I went home with 2 fourteen and 1 sixteen inch bass, 1 eleven inch Crappie and a ten inch bluegill.

I had released 4 bass ranging from 9 to 12 inches.

The following week it rained for two days, and the same general conditions existed. In two hours, I caught two fourteen inch bass, one eleven inch crappie, and two fourteen inch migrant rainbow trout.

The next day the river had dropped. The run was flowing swift and shallow. The minnows were gone and so were the bass.

Now, let's look this situation over a little.

The river was high and muddy, the runs were high and clear. Minnows, from the river, had escaped the swift and muddy current of the river. The runs flowed water a few degrees warmer than the river.

A perfect and logical place for a hungry bass.

Now, with the falling river, you have to change your method of fishing. The river will not clear up for a week or two, and the runs are not flowing sufficiently into the river.

The river is muddy, and the runs are clear, now's the time to find a run that flows through 3 to 10 miles of timber-land. Some of these small, jump-across, streams have excellent fishing. You may not catch anything bigger than fourteen inches, but the bass in these runs are numerous, voracious, and

light furiously in these cramped quarters.

These runs are a series of holes and riffles.

The riffles will not be more than 2 inches deep and probably not over 2 feet wide. The holes are found around rock cliffs, soft places in the run, and at tree roots and fallen timber. The holes may not be over 2 feet deep in the summer. But, bass are there waiting, if the run empties into known bass water. Not very impressive water to be sure, but full of good fishing.

In the spring, fish migrate up this stream, being lured by the abundance of minnows and crayfish. They may travel for miles and then with the receding waters find themselves trapped.

I have never failed to catch fish in these types of water, and the ones I catch are not half starved, but plump and sassy even in late fall.

But, fishermen are fickle, after they have located a good fishing area they soon begin to cast about for a change of scenery.

By this time the river has fallen and taken on that cool, greenish water. Water that raises the temperature of the most inexperienced fisherman.

It's late spring, and the water still becomes murky or muddy at every sudden downpour. But, fishing in general is pretty good. There are books written on how to fish this kind of water. However, we are interested in the little tricks of the trade.

Let's say the water is low to normal, clear, and in general average fishing water. Suddenly from the distance a dark cloud forms and forbodes rain. The

clouds pass over, not spilling a drop, but the day seems to stay somewhat hazy and threatens rain.

This is an exciting time for me. I am not so interested in the clouds overhead as I am those clouds that passed an hour ago.

I check the watershed that will supply the nearby rivers and creeks. I call the State Police on weather conditions in these areas. Many times those dark rumble-in clouds that should have dumped water on you did so "up the Holler."

If it did, I grab my gear and head for the river.

The rain that falls far upstream will eventually muddy the river, but it has another affect almost immediately on your river.

You get what is called a "clear water rise." The water begins to rise slowly, and those riffles, where the minnows had been playing in 2 and 3 inches of water, will now flow swifter. Minnows will be struggling with a new current, some being swept into the pool below the riffle.

As the water continues this rise, the bass begin to feed frantically on these helpless minnows. Fishing is now at its best.

Artificial or live bait will fill the creel in just a few hours. Just stand in the riffle and let the lure be washed over into the pool below.

This is easy fishing, all you have to know is when you will get that "clear water rise."

And there you have it, three little "twists" that can change that Saturday into a successful day of fishing. No secrets, just common sense and biology.

ANGLER QUIZ

By Carsten Ahrens

Fishing Gear

We use a variety of substances in making our fishing equipment. Match the item with the usual material(s) from which it is made.

- | | |
|--------------|--|
| — A. Bobbers | 1. Lead . . . sometimes nails, screws, nuts, wedding rings, etc. |
| — B. Lines | 2. Steel . . . once thorn, bone, ivory, even bent pins. |
| — C. Sinkers | 3. Cork, plastics . . . even wood or corncobs. |
| — D. Plugs | 4. Feathers, hair, fur, thread, etc., etc., etc. |
| — E. Hooks | 5. Bamboo, glass, steel, limb of an apple tree, etc. |
| — F. Flies | 6. Nylon, silk . . . even kite strings. |
| — G. Rods | 7. Willow. |
| — H. Leaders | 8. Wood, plastics, metals. |
| — I. Creels | 9. Silkworm gut, nylon. |
| — J. Guides | 10. Agate, hard metals. |

Answers on Page 22

Forestry Association Announces "Good Outdoor Manners" Contest



I Need A Name!

Recognition of the fact that each year more people seek enjoyment in outdoor recreation but available areas of forests, fields, and waters open to public use are nearly static, or decreasing. Basically, there are more people with more free time, acquired equipment and strong desire to get outdoors than ever before, yet areas open to them are decreasing constantly. Public facilities—camp sites and open land areas—are not keeping abreast of demand, and more "No Trespassing" signs are going up each year. Thus open and available areas must accommodate more people. And with increasing use and pressure on existing facilities, there is certainly a greater need for more people to HAVE GOOD OUTDOOR MANNERS.

The need concept for this educational program developed from repeated expressions of concern over the destruction of public property and abuse of privileges at parks and camp sites, the indifference of "recreationists" to the rights of landowners, and the apparent assumption by some that the outdoors was theirs to monopolize as fancy dictated.

In analyzing the problems presented, it became apparent that none of the present outdoor educational programs, within itself, treated with the need of directing public attention to basic human actions and relationships as encompassed by the phrase "Have Good Outdoor Manners." THE GOOD OUTDOOR MANNERS EDUCATIONAL PROJECT objectively aims

to support present outdoor educational programs by directing attention to each as a part of the total needs for man to develop good outdoor behavior. "Having good outdoor manners" is more than being careful with fire, picking up litter and leaving a clean camp site, or asking a farmer's permission to hunt or fish on his land. People—more every year—must be told and must learn how to live together outdoors so that the maximum enjoyment from their recreational hours will accrue.

By directing public attention to the slogan HAVE GOOD OUTDOOR MANNERS and by associating it with a characterized raccoon will serve to establish it as a symbol much in the same manner as "Smokey Bear" symbolizes protection against forest fire.

\$1000 IN AWARDS for naming THE GOOD OUTDOOR MANNERS RACCOON

1st Place Award\$200 U.S. Bond
2nd Place Award\$150 U.S. Bond

Additional Prizes

3rd Place Award\$100 U.S. Bond to boy;
\$100 U.S. Bond to Girl
4th Place Award\$75 U.S. Bond to boy;
\$75 U.S. Bond to girl
5th Place Award\$50 U.S. Bond to boy;
\$50 U.S. Bond to girl

Honorable Mention Awards

Two Honorable Mention Awards to each grade,
judged on a statewide basis:
\$10 to a boy \$10 to a girl

Rules of Contest

1. Contest is open to all students enrolled in any school within the State of Pennsylvania. A youth group—school, class, club—is eligible to participate as a unit, and the entry it submits will be judged in competition with the names entered by individual students.
2. Contest is to provide a name for THE RACCOON which is associated with the slogan "HAVE GOOD OUTDOOR MANNERS."
3. A statement, of 25 words or less, telling WHY the name submitted was chosen, must accompany each entry. These statements will be rated and used to determine place winners among those who submitted identical names. Selection of winners will be based on appropriateness of NAME submitted, and on the originality, clarity, neatness, and spelling of the brief statement.
4. From names submitted ONE will be selected which in future annual contests and in general publicity will be USED to identify THE Good Outdoor Manners RACCOON.
5. No entrant will be given more than one prize.
6. All entries must be mailed to The Pennsylvania Forestry Association, P. O. Box 389, Ardmore, Pa., and must be postmarked not later than March 15, 1959.
7. All entries become the property of The Pennsylvania Forestry Association.
8. Winners will be announced in May and prizes awarded promptly.
9. Contest judges will be representatives of the sponsoring agencies and others designated. Decisions of the judges will be final.

SUSQUEHANNA BAROMETER

By ROBERT G. MILLER

In 1954 a Pennsylvania Fish Commission survey of the Lake Clarke area on the Susquehanna River revealed that although rough fish were predominant its smallmouth population was high and the lake represented excellent bass waters.

The same analysis showed that fishing pressure here, a ten-mile stretch of water backed up by the Safe Harbor dam, was relatively light in comparison with other sections of the Commonwealth.

No subsequent survey has ever been completed to determine how many anglers are taking advantage of this report, but among those fishing the stream is a regular who needs no such research to realize the recreational value of the Susquehanna.

Sure, there are days when you can fish the stream from morning to night with nary a strike, but when 7-year-old Clayt Rathfon, of Columbia, goes after fish he generally returns with fish.

Rathfon, who owns a small island at the extreme north end of Lake Clarke, is something of a living fishing barometer in the Columbia area. As he trudges home from the river pulling his express wagon load of fish, people check his catch and can tell right away what current fishing conditions are.

His small island, which once measured seven-eighths of an acre, is one of a string of islands which stretch from shore to shore with pretty deep water in between. Just above are the grass patches and the remnants of the old shad dam.

With the exception of Rathfon's property, all other lands contained in the chain are owned and leased by the Pennsylvania Water & Power Corp.

Rathfon, by far one of the best known and most serious minded fishermen in the Columbia area, occasionally keeps a seasonal tally of his catches. One year he hit the 1,000 mark and as the 1958 season neared close, with two or three months of good fishing still a store, he tallied up his catch and reached nearly the 1,000 mark.

Perhaps the unfortunate and less serious minded angler might label him a "meat hunter." This is not the case. A retired railroader, Rathfon finds fishing is one of the best means of spending his spare and leisure time and he constantly urges others, especially youngsters, to do likewise.

A native of Michigan, Rathfon fished Lake Erie as a youngster; later wet lines in the various streams of

Canada where he went to live with his parents, and even tried his luck in the salt water off the New Jersey coast.

However, even with this all-around experience in places where fishing is highly advertised for the benefit



STRICTLY A live bait man, Clayt Rathfon, Columbia, checks over a small spinner which is as close as he comes to using artificial lures. He uses live bait in conjunction with the spinner.

of vacationers, he still likes the Susquehanna where more skill and know-how is needed to locate the schools of smallmouths, walleyes and, in a few years, muskies which were stocked in the stream in 1958.

Of course, when river conditions aren't quite up to par for game fish, one can always find excitement with nice sized crappie bass, catties or even a hefty carp on the end of light tackle.

Rathfon started his fishing career at a time when throw lines, any number of them, and heavy tackle were in style. Consequently he doesn't exactly go along with the new light weight stuff advocated these days by the various manufacturers and younger fishermen.

Being strictly a live bait fisherman, the hundreds of



LIVE BAIT is netted by Rathfon from one of several small docks which surround his small island in the Susquehanna.

new fangled artificial lures offered each year leave him cold. His only artificials are two small spinners which are used for trolling in connection with live bait.

After 11 years in Canada, Rathfon came to Lancaster County in 1904 and between runs on the Pennsylvania Railroad found time to fish the river and its tributaries including the Chickies and Conestoga Creeks. He also took out his share of sunfish and bass from old Kerbaugh's Lake, which was washed away

during the flood of '36, and Grubb's Lake until it was closed to fishing.

He purchased his island a few years ago and spends as much time there as is possible. As a result he knows the location of just about every good fishing hole in that area and, unless conditions are real bad, he doesn't return from a fishing jaunt empty handed.

During the 1958 season he did not do too well with the smallmouths but did manage to catch 22 walleyes which would indicate, since he considered it an excellent year for this species, a general increase in the walleye population with better fishing in store next year.

Partially deaf and suffering a slight limp, Rathfon begins the season usually in April and winds it up at the end of October or whenever the river starts freezing over.

When he isn't fishing he can sit on the porch of his cottage and watch a duck and her duckling paddle from one grass patch to another, delight in a flock of waterfowl as they silently glide in for a landing, and occasionally see a buck or doe swimming from island to island.

Perhaps all of us cannot own an island but it is still possible to take advantage of this opportunity to fish these waters and achieve the same enjoyment as Rathfon even though we don't return home with the limit.

Fish Change - - Why Not Fishermen?

By HOMER CIRCLE

A group of veteran fishermen were talking, after three days of fishing with mediocre results. These are the times when fishermen think best, under pressure from the fish . . .

Said one: "What gives? All of us fished our old trusty lures, in proved spots, water looks fine, and in three days we have about one-third our usual total. Do you suppose fish are changing their habits?"

"Well," offered another, "it's a logical assumption because net tests by the conservation department show plenty of fish are in these waters. But why should they change?"

Good question. Fish change for two reasons: (1) with some 5,000,000 boats and millions of motors churning the waterways, fish move to deeper quieter spots. (2) Just as neighborhoods deteriorate, so does fish habitat, or cover. Fish move into other areas that offer more food and plant oxygen.

Suggestion. Fishermen, like fish, should change their

habits. Try new lures, in deeper water; fish twice as many lakes as you normally do; cast into spots where few others think of trying; use smaller lures, change colors often; reverse some of your habits . . . if you normally retrieve fast, try it slow . . . if you usually fish all day, try fishing all night.

The fish probably are still in your pet lakes and streams. But they're smarter fish, man-traffic conditioned. Just change your fishing habits, and you might get as smart as the fish!

Answers to ANGLER QUIZ

3	A	4	F
6	B	5	G
1	C	9	H
8	D	7	I
2	E	10	J

A Matter of Approach

By L. JAMES BASHLINE

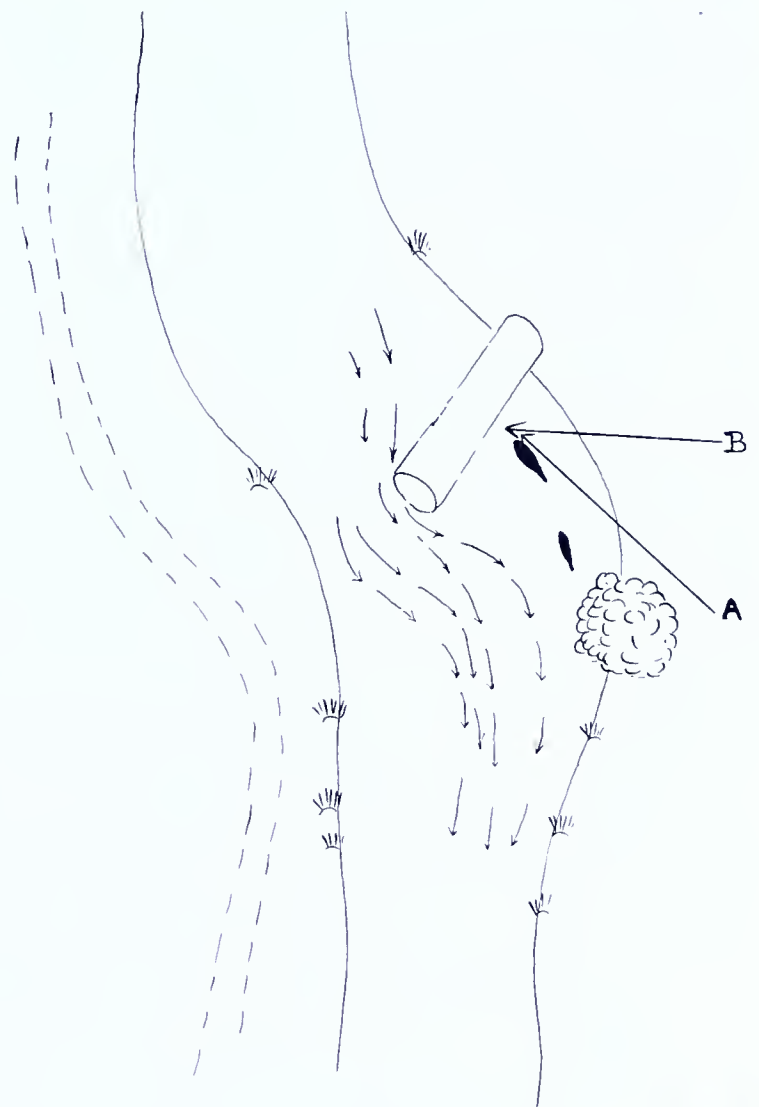
All of us who have fished the well-known trout streams of our own areas have seen that hard trodden path which follows the easiest route along their banks. That is a peculiarity of human beings—to always take the easiest possible way in travelling from one place to another. This is never demonstrated more clearly than it is on trout streams. Some of these trout trails are so firmly stamped out that it is nearly impossible to walk on them and there, fellow anglers, is the answer (at least one of them) to the question of why some fishermen take trout from hard fished waters and others do not. It's simply a matter of approach.

In streams which take a hard pounding, the fish have learned where to look for humans. They really become used to them and know that anything that is offered to them from those locations is to be avoided. I have often seen brown trout in very shallow water allow an angler to approach quite close to him without so much as stirring a fin. But as soon as a fly hits the water, he's gone. When this happens, we are inclined to say that the trout was leader shy, or we made a sloppy cast, or did something else wrong. Any of these excuses might hold up, but I believe that the trout actually saw us and as soon as the fly touched the water he associated it with the human silhouette, knew this was a bad combination and decided to move. I am not saying that trout have the thinking power to reason this out. Still I believe that they must have some grey matter, or we would have caught them all long ago.

Let us assume that we come upon a pool laid out in such a manner as Fig. 1. The path follows the left side of the stream, so the trout which lay behind the half submerged log are accustomed to see anglers approaching from that side. If a good "sneaking up" were accomplished from this side it would still not be a very good way to cast to these fish. The current which loops around the left end of that log would give too much drag to your fly that the trout probably would not accept it. "A" is not a bad position to cast from, but if you have seen a larger than average trout jump here, and you manage to hook him, that bush might give you a rough time of it. "B" is about the best. From this position you can manage a drag free cast and upon hooking a fish, can play him without much difficulty.

The old rule which says that a wet fly must be fished down stream, and a dry fly must be cast up stream needs some re-writing. The rule is generally

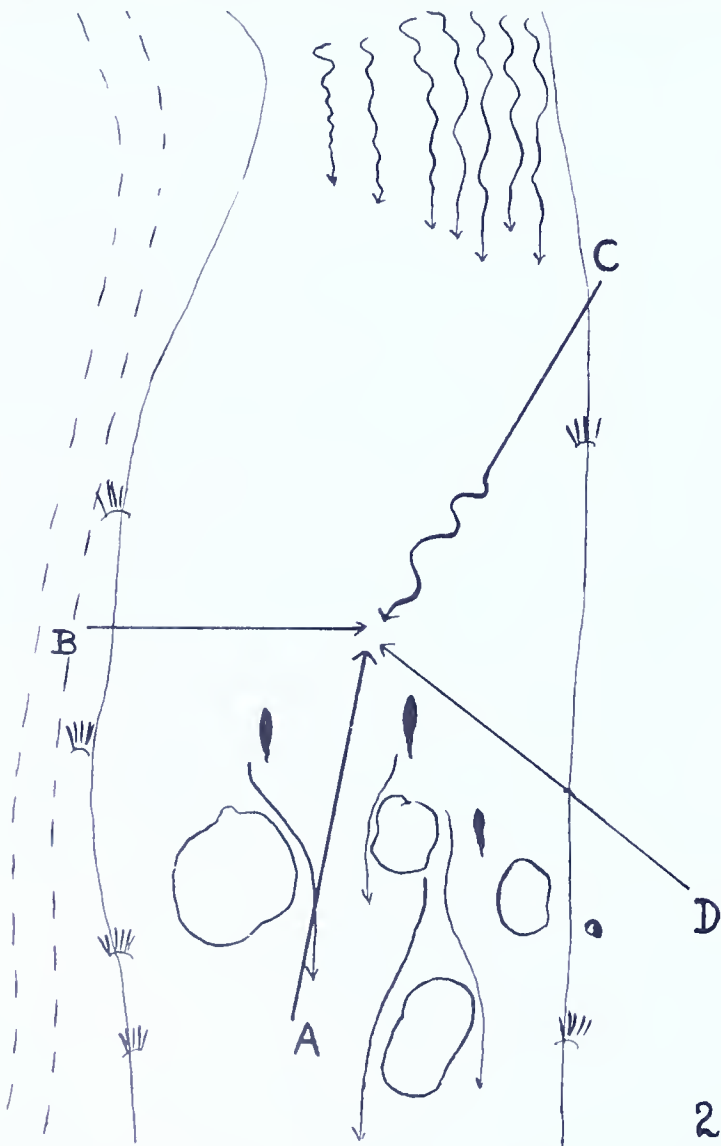
true, but on hard fished streams we cannot apply generalities and expect to do well—the fish are just too experienced! We must break away from the orthodox with a situation such as Fig. 2 presents itself. Here again we have the pathway on the left side of the stream. The pool is smooth surfaced with some very large boulders at the tail end. The feeding trout are laying just in front of these obstacles, and



are offering a really difficult problem. The easiest place to cast from is obviously "B." It is also the position that the trout are expecting to see the fisherman, therefore we can rule out this spot. We might be able to negotiate an acceptable cast from "A," but the chances are the leader would fall directly on top of the fish and undoubtedly frighten them. "D" is really the best spot to cast from, chiefly because you are behind the fish and a little to one side offering them your fly with a minimum of drag. But here again, if you should hook a good fish, those boulders would give you some

bad moments and may cost you the fish. "C" requires you to make a long down stream cast, but by throwing some wiggles into your line just before the fly touches the surface, you will achieve a drag free toss. By doing this, if your fly is a good imitation of the hatch, you should hook at least one of these trout.

We could fill several pages with sample trouting problems such as these, but the point which I wish to emphasize can best be learned by doing. The basic rule is to think of each pool as a problem in approach. When rising trout are seen, ask yourself these questions. Where do most anglers cast from when fishing this pool? (then avoid that spot like poison ivy) Where would the trout be most likely not to see me? (if possible cast from there) Where can I manage a drag free float? (if this question has the same answer



as the previous one, by all means cast from there)

Anglers who fish a particular stream almost exclusively during the course of a season make the proper approaches automatically. These fellows with their intimate knowledge of the stream are always the high rods on the days of the good hatches. Those of us who fish less often or try a wider selection of streams are somewhat handicapped. We must more or less play by ear when it comes to choosing a casting location.

Aside from selecting the actual bit of real estate to cast from, there are several other things which must be observed if we are to improve our fly fishing technique. The most important of these is shadow. All of the trout's natural enemies cast a shadow, man included. If at all possible, do your fishing from the dark side of the stream. When conditions won't allow this, and you must fish from the sunny side, make your approach in slow motion and stay as low as possible. It is also a good idea when fishing from the bright side to use a side arm cast, keeping your rod parallel to the ground. Many a fine trout has been put down by the flash of sunlight on ferrules, or the high varnish finish on some rods.

If a trout refuses your first cast and continues to feed, pick up your line carefully. Allow your fly to float well past the fish before you begin your next cast. Trout are easily frightened by that annoying "slurp" which happens when a line is picked up hurriedly. Upon making that next cast, try to put your fly in a slightly different location. By doing this you give the trout a change in angle from which to view the fly, perhaps making it more acceptable to him.

When trying for a larger than average trout, if you do make an error in the actual casting or an accident allows the leader to double back on your line, do not correct immediately. Allow the faulty cast to float well past the trout, reel up and wait. If you smoke light up, and enjoy it for a few minutes. Many times the trout will resume feeding and you will have another chance at him. If he completely ignores you fly for several casts and your technique is not at fault the answer is usually the fly. Again, wait a few minutes, and try another pattern. If he comes to the fly but does not take, or if he strikes short, chances are good that the fly is the wrong size. Try a size smaller. The results obtained from doing this are sometime amazing.

A good rule of the thumb concerning leaders is to use one at least as long as your rod. If the water is exceptionally low or clear a twelve foot leader is not too long. Of course leaders of this length are more difficult to handle but the increased number of strikes is well worth the trouble.

All lines and leaders, no matter how fine, cast shadow. We simply cannot avoid it. For this reason never cast directly upstream over a feeding trout unless it is impossible not to. If the line falling square on top of him does not put him down, the leader will as he comes to your fly and bumps his nose on it. While most of my fishing experience has been with brown trout, I rather imagine that rainbows and brooks can be almost as fussy when extensively fished for.

If you do draw a complete blank when trying for

particular trout, and he ceases to rise, withdraw from the pool as cautiously as you approached it. Go on about your fishing and then just before you decide to hang it up, go back and try for him again. Try a different fly and a different approach and you may take him. One evening while casting over a cut-bank pool on the East Fork of the Sinnemahoning, a trout of fifteen inches came to my March Brown. He threw water for five feet but he did not actually take the fly. Somehow, when I struck, the fly hooked him on top of the head and I, expertly, managed to break off the leader. After calling that trout several nice names, I proceeded to the next pool and resumed my fishing. I fished up the stream for perhaps a quarter of a mile catching a couple small fish and then started to walk back to my car. As I came upon the pool which held my fly stealing trout, I saw a fellow angler in the process of netting a nice fish. "That's a nice fish" I said in a casual way, half wishing that I had caught it. "Best I've caught all day" he answered, "and say, look at this." He held the fish up for me to see and there impaled right between his eyes was my No. 12 March Brown. He generously gave me back my fly, but not the fish. This incident shows that even badly frightened trout can sometimes be seduced into taking again if left alone for a reasonable length of time.

The majority of trout streams in the east can easily be fished without wading. At all times, and especially when fishing dry flies, wading should be avoided unless absolutely necessary. I have always believed that the sounds of rocks as they crunched under your waders alarmed the trout far more than any surface disturbance. It is often possible to catch several trout from the same pool when the fish are really feeding. The sounds of a fish splashing about do not seem to upset them unduly. But try clicking a couple of rocks together underwater and the feeding activity usually ceases. If you must wade, do it as if you were walking on egg shells, placing each foot so as to disturb the stream bed as little as possible.

The actual walking done while fishing some streams plays a more important role in our success than we may suspect. Along most gravel bottomed streams, the heft of our footsteps probably means little. Some very good trout water flows through spongy meadows and swampy flats, and here the problem of approach takes on some real meaning. Streams which flow through wet swampy areas, with their banks undercut with muskrat burrows sometimes require some fancy maneuvering.

A small brook comes to mind that had me baffled until I put a little common sense to use. I had been fishing a beaver dam with little success as it seemed to be strictly nursery water. All I could catch were 5½ inch brook trout. There was a considerable flow of water escaping from beneath the dam and it

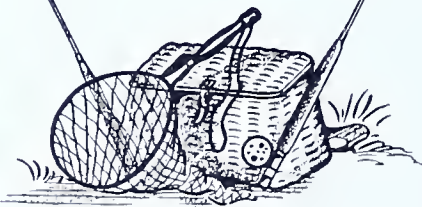
cradled out a good sized pool about four feet below the breastwork. As I was reeling up, I happened to glance toward this pool and I'm sure I did a double take as I saw a trout rise and make a considerable swirl, betraying it as a good sized fish. I eased back from the place I had been crouching and decided to make a wide circle around the pool and approach it from below as I felt the swamp grass which lined the banks would conceal me. This was true enough, but the trout did not come to my first cast, or to any other cast. I was sure my attempt had been good, the fly had drifted perfectly over where he should have been, but he had not risen. I began to stand up slowly, expecting to see him dart away, but there was no trout there. Just then, in the next pool below the dam I saw another trout jump. Feeling better already, I made the same type of careful approach on this pool, kneeling low in the swamp grass and feeling quite confident that I would take this fish. But I didn't, and the fish did not rise again. Now it was beginning to annoy me. Here were two obviously feeding trout that had seemed to stop feeding even before my fly was on the water. Then, the saints of fishing must have smiled on me, for the earth where my knees were resting gave out a muffled gurgle, and the answer was upon me. The extra porous soil along the stream was honeycombed with water pockets and this loose structure was simply telegraphing my presence before my fly hit the water. A few moments of surveying proved the earth about 35 feet back from the stream to be of more solid nature. Armed with this new knowledge, I slowly hurried to the next pool, staying well back from the stream, walking on firmer footing. Happily, there was a trout jumping here too. The small rather limber brook trout rod I was using protested violently as I began to play out far more line than it was used to handling. But it held up well and I was able to make a forty foot cast to this particular trout, with more than thirty feet of line resting across the swamp grass. The fly dimpled the surface gently, floated for about one inch and disappeared with a loud smack! I struck, but the little seven foot rod didn't have the power to pick all that line up quickly and the line went limp for a few seconds as I reeled violently to consume the slack. As the line tightened, the fish thrashed about on the surface and was promptly skidded onto the swamp grass. He was a beautiful twelve inch brook trout. Lover of brown trout that I am, I must admit that nothing is more wonderfully colored than a cold water brook trout.

Using this far away approach, I succeeded in creeling five more of those vividly marked brookies before they stopped jumping. I might add that this particular stream is well fished during the season, and most fishermen feel fortunate in catching a couple of brook trout from it. Again, it's a matter of approach.

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA FISH COMMISSION

Conservation Pledge

I give my pledge
as an American to save
and faithfully to defend from
waste the natural resources of
my country - its soil and
minerals. Its forests,
waters, and
wildlife.



PENNSYLVANIA

ANGLER

FEBRUARY 1959

PENNSYLVANIA FISH COMMISSION



**PENNSYLVANIA'S NEW GOVERNOR
HON. DAVID L. LAWRENCE**

GUEST EDITORIAL

Sportsmen 'Rubber Stamps'?

Frequently the organized sportsmen throughout America get tagged as being "rubber stamps" for the conservation department in their home state. Usually this tag is tacked on simply because the organization agrees with policies of the department in certain cases that are questioned by either individuals or other organizations.

Sometimes it may be used when opponents of this policy have no sound, concrete reason for disagreeing with the department other than the fact that they are against the department on everything.

I use the term "organized sportsmen" because it does not only apply here in Michigan and to The Michigan United Conservation Clubs, but is prevalent nationwide. Other states have practically the same battles we do in this state, although perhaps not on so large a scale.

Sportsmen make up their minds from what they see in the woods, or what they don't see in the woods. They make up their minds by what they don't catch in our streams. If things are not right, someone has to take the blame, and usually it is something the conservation department has done, or something the conservation department has not done.

The organized sportsmen of all these states have a tremendous job to do in assisting the various departments in improving hunting and fishing, and in conserving our natural resources. They cannot do their job properly and be prejudiced toward the department in everything it does. Nor are they justified in tacking on the label of "rubber stamp" to any individual who is working with the game biologist, the fish biologist, or any phase of outdoor life.

The average sportsman does not have the background to intelligently recommend basic biological changes in the department's procedure. They do, however, have the prime responsibility to make localized observations that might help the overall picture of conservation. That is where the sportsman fits into the picture.

But never has MUCC taken the position that they are always right. Nor have they always agreed with the actions of the conservation department. It has been a matter of give and take from both sides, and in neither case could the other be labeled a "rubber stamp."

This makes for good conservation practice and has pushed Michigan to the top as a recreation state. Let's keep it there with co-operation and factual reporting, giving and taking . . . all with an open mind—*Michigan Out-of-Doors*.

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FEBRUARY, 1959

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J. ALLEN BARRETT, Editor

JOHNNY NICKLAS, Photographer

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Sortin' Fish

Now

Like

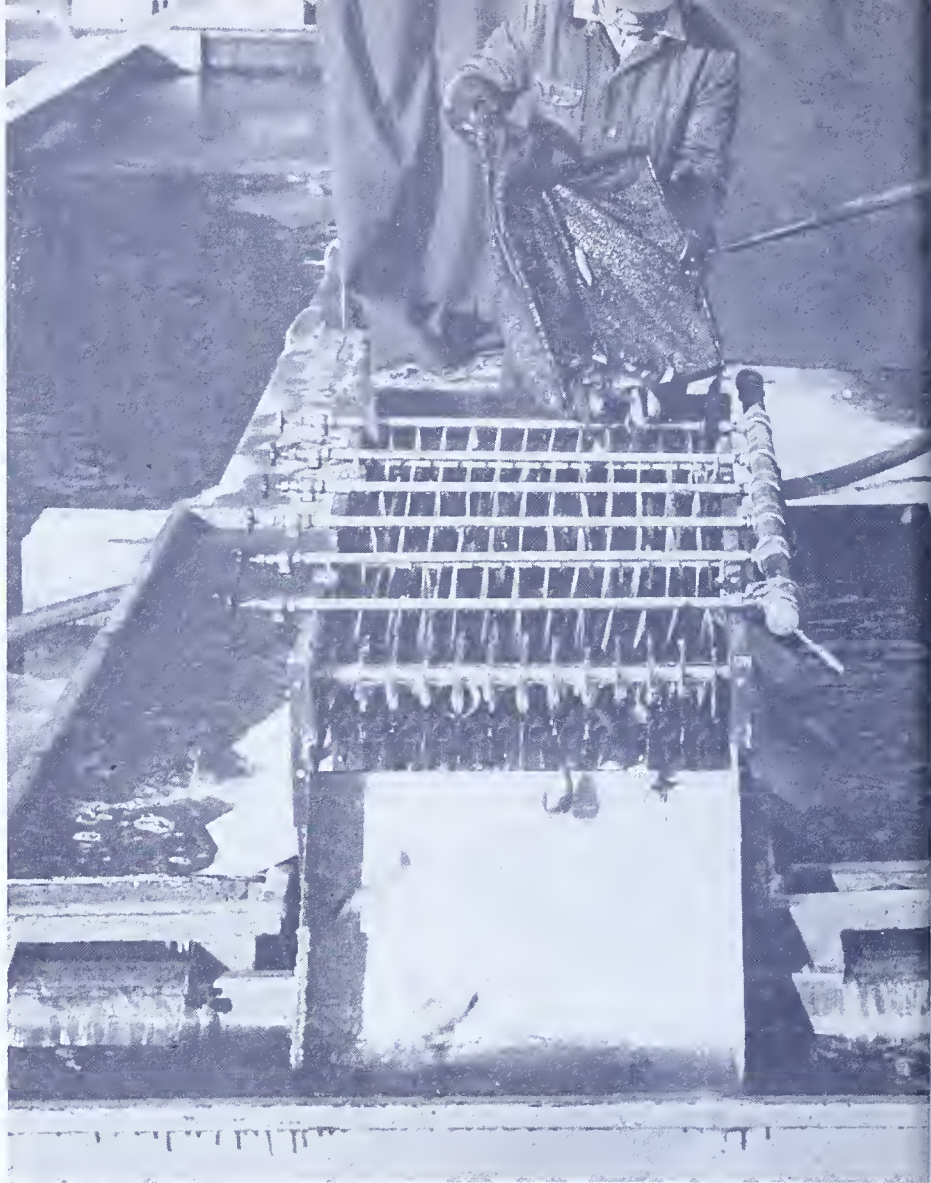
Sortin' 'Taters

By KEEN BUSS

Fishery Biologist

Benner Spring Fish Research Station

Pennsylvania Fish Commission



Many years ago on the old homestead in the Pocosin, the folks looked forward to 'tater sortin' time. On occasional fall evenings, a few neighbors would set in and help hand-pick the little 'uns from the big 'uns, at least until the cider barrel started to suck air. Then some city feller (he must have been from below the mountains, where the dogs don't even have a friendly tree) spoiled all the fun by inventin' a new-fangled mechanized 'tater sorter thingamajig. Could be the new gadget did some good, 'cause with this and other new ideas that came along, Pop didn't need us for help anymore, so we left home to get edjicated.

Some of us still had a hankerin' for raising things so we got tangled up in the trout rearin' business. What happened? We're back in the same old rut. But this time it war'nt 'tater sortin'—it was trout sortin'. Only with trout, they use the high falutin' term—"grading." However, it wasn't fun anymore. They (the bosses) made you stand by the hour to do the gradin'. The air was cold, the water was cold, and there were no friendly cider barrels to heat up the innards and give the job a rosy outlook. We had to handle the wiggling little critters, one at a time in a

THE NEW "mechanical" sorter enables handling trout by the netful rather than one by one or by the boxful, as in earlier methods. And as many as five sizes can be graded simultaneously. Only three sizes are being graded above.

Two rows of tubes are built into the device and set at a slight decline, sliding board fashion. One is of small diameter tubes that are stationary and arranged parallel to but above and between a row of larger tubes. The latter unit is adjustable and can be raised at the end that receives the fish. This lessens the space between the rows of tubes at that end.

Beneath and not visible in the photo, are plates placed to form bins for desired sizes. If the grading is to be done for five sizes, three plates are used and form four bins. The spaces between the two rows of tubes that become progressively greater over each bin permit the smallest fish to drop into the first bin, the next size into the second bin, etc. The largest fish, usually those to be stocked, drop out of the open end into a holding trough, ready for transfer to the stocking truck. The bottoms of the bins are also set on a decline, but toward the sides of the sorter. On the open sides of the bins are chutes that direct each size fish to a separate trough. Those in each trough are later returned to separate rearing ponds. A constant spray of water is maintained over the sorting area to facilitate the operation and avoid injury to the fish. To guard further against injury, all surfaces and edges within the sorter are smooth and rounded.

net. The little 'uns went into one compartment and the legal ones into others: 6 to 7 inch, 7 to 8, 9 to 10, 10 and larger.



THE HAND method of sorting or grading, wherein almost every fish is handled individually.

Sometimes we used a sortin' box with rigid parallel bars. The small fish squirmed through between the bars and those which couldn't were dumped in the shipping compartment. The trouble was, the little 'uns had to be sorted—pardon me, graded again so that the bigger of them didn't eat their smaller kin or push their weight around come feedin' time.

To make matters worse the fishermen were hollerin' to have the fish stocked by April 15th. We didn't blame 'em either because we were all working like mad so we could get a little fishin' in the first day too. Of course, after sortin' a half million to a million trout, some of our enthusiasm was dampened, but we still looked forward to freezin' with the other guy.

Besides, this day we could carry along a little cider, which by this time was a bit on the hard side and would really perk up the insides and then some. We usually did right well by the jug, for that cider had to last a couple of months. We knew that when we got back, we'd have to sort the fish again for mid-season stocking. After that we have to sort (there we go again, we should have sed grade) the fall fingerlings again, so that the little spotted devils wouldn't eat each other up or the big 'uns wouldn't steal all the food from the little 'uns.

However, things are lookin' rosy again. No, the cider barrel is still frowned upon. Rather, it's because a fellow by the name of Morton—K. E. Morton—of Wizard Falls Trout Hatchery near Camp Sherman, Oregon, invented a new sor . . . grader. To use his words, he developed “a new mechanically ad-

justable multi-size fish-grader.” He writ this up in a publication all the fish culturists use, namely, **THE PROGRESSIVE FISH-CULTURIST**. On the front of this perticular issue, it says Volume 18, No. 2, April, 1956.

Since Mr. Morton writes good English, we will copy his story of the sorter—there we go again—grader.

“The main objective in the grader design was to have a continuous, adjustable, tapering slot. This was secured by having a lower set of large tubes rigidly spaced and fused into one unit supported by two ½ inch aluminum rods running through the lower plastic sheets which support the large tubes. The rods, in turn, are supported by hangers that extend to the adjusting wing nuts. The wing nuts tip the large tubes away from the stationary smaller tubes above, creating a tapering slot four feet long. The amount of taper is dependent upon the size of fish to be graded. The upper and vertical plastic sheets (¼ inch thick), to which the small tubes (½ inch) are fused, not only help to form the tapering slot, but also serve as separators by keeping the fish parallel with the slot and thus preventing the fish from piling up in one groove.

“The overhead spray system is an important addition to the new design. This system permits the elimination of one man from the operation and—because of the angle of the jet streams as they strike the large tubes in each slot—lubricates the surfaces, helping to keep the fish moving along and supplying water



THE SORTING box enables sorting or grading by the boxful rather than one by one. The bottom of the box is a series of fixed rods. The rods of the one pictured above are spaced in a manner that permit all but the legal size trout to drop through. Other boxes are constructed to enable sorting at each stage of growth from small fingerlings to adults.

to the rubber troughs that are attached underneath to carry the fish to individual live-cars."

Of course, Mr. Morton sed a lot more about the construction and operation of this sorter,—er, grader, in his story. The editor of this publication—the ANGLER, that is—writ a bit more on the Fish Commission's model under the photo at the beginning of this piece. Between the two you should get a purty good idea how it's built and works.

Anyhow, our boss was interested in this labor and time saving contraption, so one was bought from its manufacturer for the research men at the Benner Spring Fish Research Station to try. It is said that

this here thing will sort 10,000 to 20,000 fish an hour, compared with 2500 fish 5" to 9" long per hour by hand and 5000 fish 5" to 9" long per hour by sorting box. That seems like an awful lot, but they tell us if the thing does the kind of job that is claimed for it, that they will be put in all of the Pennsylvania Fish Commission's hatcheries. The time saved will enable us to devote more time to other important chores.

There is only one thing that Morton feller forgot. He forgot to put a place for the cider barrel. Yessiree, dag nab it.

A Day I'll Remember

By RALPH SEAMAN

While fishing out of Keith Hook's Musky Camp (Kenora, Ont.) I had the following very interesting experience. I had made a cast toward a small rock island and as I made my retrieve I saw a musky of probably thirty pounds following my lure. As soon as he saw me he of course quickly vanished.

"We won't cast anymore now," the Indian guide recommended. "We'll rest him for an hour or so while we fish elsewhere, then after he has maybe forgotten about your bait we'll try him again. Maybe he make mistake and take your bait!"

So, nearly two hours later we returned to the same reef. We had noted that one side of the reef tapered off into a quite large rock "flat" while the other side broke off into deep, dark water. It was from this deep side that he had come out on the previous try. We circled the reef widely and sneaked up quietly so I could lay a cast right where I wanted it. I arched it out. The butterflies in my stomach fluttered about.

"There hc comes!" the guide said as I retrieved the lure.

Sure enough, therc he camc, with his nosc almost touching the bait.

But, as before, as soon as he sighted us he casually departed.

"You need a longer leader!" Charlie needled me.

Seven more times he followed that lure, on seven consecutive casts. Then, as he again took off I spoke to the guide: "Charlie, I've been an idiot!" I said. "Why didn't I Figure-8 him?"

Charlie grinned. "Try. Maybe he make mistake."

On the very next cast in he came again. I stood up in order to have more room to maneuver the Figure-8 movement. The purpose of the Figure-8, of course,

is to keep the lure moving and the spinner spinning even though you are at the end of the retrieve. As the name implies, you merely maneuver the bait into a Figure-8.

Well, this musky came in so fast that I actually could not execute a real Figure-8. All I could do was to swish the lure back and forth in a zig-zag motion. And each time I moved it from left to right and from right to left again, it gained a little in length. But what flabbergasted me was that the muskellunge began wagging his head—actually he was wagging his entire body back and forth, back and forth—following the motions of the bait. Apparently he was completely obsessed and fascinated by the Thing because, although we were in plain sight just a few feet away from him, he never saw us.

I would guess it was on about the eighth or tenth zig-zag that he smacked it.

The only trouble was that I was zagging and he was zigging—and I missed him by about an inch! He then saw us and quickly took off.

The point I'm trying to bring out is the enormous value of that extra motion there at the end of the retrieve—particularly when fishing for members of the pike family. I know of many musky and pike fishermen who apply that motion or a similar one at the end of every retrieve.

I think it's something (including the resting idea) all of us should paste inside our hat.

(Note to Keith Hook: If nobody gets that guy before June of next year tell old Charlie to get ready because I'll be back there a tryin'! And then, as Charlie said: "Maybe he make mistake and commit suicide!")

—Carling Conservation Bulletin

PENNSYLVANIA ANGLER

National Wildlife Week

March 15-21, 1959



Seth L. Myers, outdoor writer of Sharon, has been named statewide chairman to direct the 1959 National Wildlife Week program in Pennsylvania. The appointment was announced by the Pennsylvania Federation of Sportsmen's Clubs which joins with the National Wildlife Federation in sponsorship of this educational campaign each year.

Walt Disney, widely-known producer of the "True Life Adventure" nature films, again will serve as national honorary chairman of the observance which has been set for the period of March 15-21, coinciding with the first day of spring.

Mr. Myers stated that the theme of the 1959 Wild-

life Week, "Conservation in the Schools," is intended to highlight the need for a better understanding of basic natural resource problems. "All of us, including educators and students, must apply the concepts of conservation today if the citizens of tomorrow are to have the natural resource wealth which has made America the most powerful and influential leader among free nations," he declared.

"Man's very existence is dependent upon soil and water which, when combined properly with sunlight and the components of the atmosphere, produce all he eats and drinks and many of the things he uses for clothing and shelter," Mr. Myers said. "Other products come from minerals. These are the basic natural resources which we can either waste or safeguard through the principles of conservation."

Continuing, he said: "Conservation is more than conserving—it is wise use. Many natural resources such as forests and wildlife are renewable and surpluses can and should be wisely used by man. To a lesser extent, even the soil and water are renewable resources. The non-renewable resources are minerals such as coal, oil, iron and copper ore which, when used, are lost forever. It is, of course, doubly important that non-renewable resources be wisely used."

U.S. Corps of Engineers Urges Recognition of Recreation as Use of Water

... Outdoor recreation—long a step-child in flood control, power and agricultural water developments—"must be considered as a use of water rather than a by-product of water use planning for other purposes," according to Colonel William F. Powers, District Engineer of the Philadelphia District of the Corps of Engineers.

Powers, writing in the December issue of *Outdoor America*, official publication of the Izaak Walton League, said that within the Corps of Engineers' efforts to provide water for increasing urban populations, and industrial, agricultural, and other economic needs, we must include the recreational use of water.

The Corps is obligated to plan in such a manner that it will not only meet today's and tomorrow's water needs but will provide future generations with the opportunity of enjoying hunting, fishing, and other

beneficial outdoor recreation activities, according to Powers.

The Corps' Engineer admitted that outdoor recreation was not developed in some water projects and that there have been instances where recreation values were destroyed.

Powers said, "single purpose water projects or even dual purpose projects singly developed are things of the past." He felt that a comprehensive planning concept enveloping all uses of water for entire river basins must be accepted.

J. W. Penfold, conservation director of the League, said "these statements are encouraging to those of us who are fighting for recreation's rightful place as a legitimate use of our water resources. We may hope that all state as well as federal water agencies will recognize the wisdom of Colonel Powers' analysis."

Fly Tying

... via simplified methods

Part II of a series

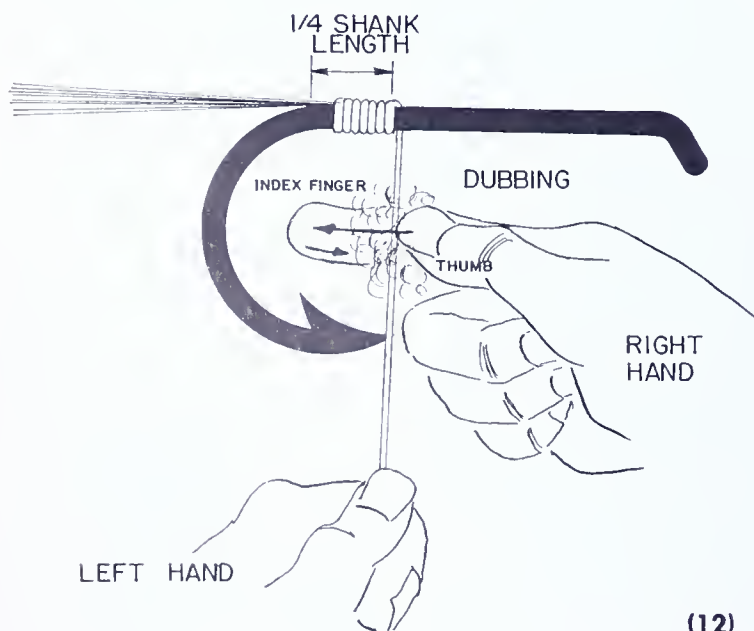
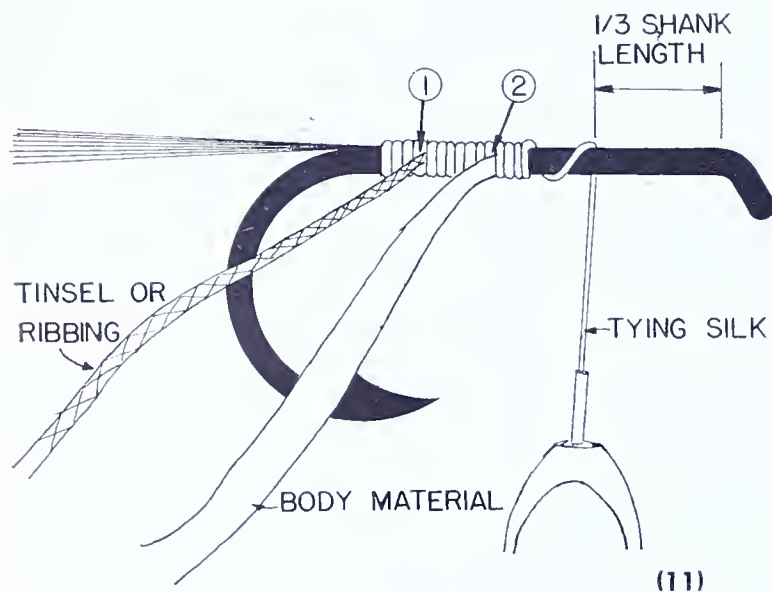
By **GEORGE W. HARVEY**

Associate Professor, School of Physical
Education and Athletics
The Pennsylvania State College

Illustrations by James E. Cartey

Body Construction and The Hackle Dry Fly

The neophyte fly tyer's greatest temptation is the urge to advance too rapidly. It is quite easy for any-



one to tie quality flies if time is taken with the fundamentals, and if each step is mastered before going on to the next. Most anglers who are fly tyers take pride in their handiwork and take great pains to make each fly a work of art. They proudly display their creations to fellow anglers and wait for the praise they justly deserve!

I know of no greater crime than to pick up a beautiful dry fly and, by mishandling, crush the hackle or wings. The fruits of a half hour's labor can be ruined in just a second or two by such an act. I have heard many fishermen say an old "beat up" dry fly is best! I am ready to admit I have taken many trout on flies in this condition, but I know from experience a well-dressed dry fly, with good quality hackle, one that will ride the water as it was tied to ride, will consistently take more trout.

Fly Bodies

There are many materials used for fly bodies. The most common are silk floss, dubbing, quill, chenille, and wool. Of all body materials, I believe the poorest is wool. I, personally, never use it, substituting dubbing, natural or dyed. Quills from the eye of an eyed peacock feather are the quills most frequently used, but hackle quill, and quill stripped from primary flight feathers (duck quills) and others are not uncommon.

To prepare peacock eye quill for use, one must remove the fine hair or fuzz from the fibers. Lay the fiber on a table with a light background. Hold by the tip and stroke toward the butt end with a soft eraser. For most flies, two inches of quill is sufficient. If you try to remove the hair from the entire fiber, the upper half frequently breaks. The butt end is the strongest and widest and is the part to use. If the fibers are soaked in water for a half hour the fine hairs can easily be stripped by sliding the fiber between the nails of the index finger and thumb.

Hackle quill is by far the most substantial, and I like to use it whenever possible. To prepare the quill, strip the fibers from a large neck or saddle hackle. Now, soak the quill, for at least an hour in water. Tie in by small end and wind on, winding so that each turn is as tight against the preceding one as is possible. Never overlap. This type of quill gives an even-

tapered body. A thin coating of lacquer over the body will help show up the segmentation more clearly.

It is well to remember when using any quill orinsel for bodies the shank of the hook should be kept as smooth as possible. Any irregularities that show up after tying in the tail should be filled in with tying silk.

When chenille is used for bodies, it is best to shred the end and tie in by the two exposed threads. This way you avoid irregularities or humps in the body.

The dubbed body or fur body is very popular. By blending different colored fur, most any shade can be obtained. Fur from any animal, if it is soft enough, may be used.

To prepare fur for dubbing, first pull out all long guard hairs so that only the soft silky under fur remains. If the natural color is to be used the under fur may be left on the hide until ready to be used. However, I still like to pull it out and separate it so no small bunches hold together. If one wants to blend, several colors (dyed or natural) may be used. Mix them by pulling out or cutting off close to hide a little of each color. Lay them together and pull apart; lay back together and repeat until original colors are blended to new shade. You may have to add a little extra of one or more colors and mix again if the shade is not what you want.

(Diagram No. 11)

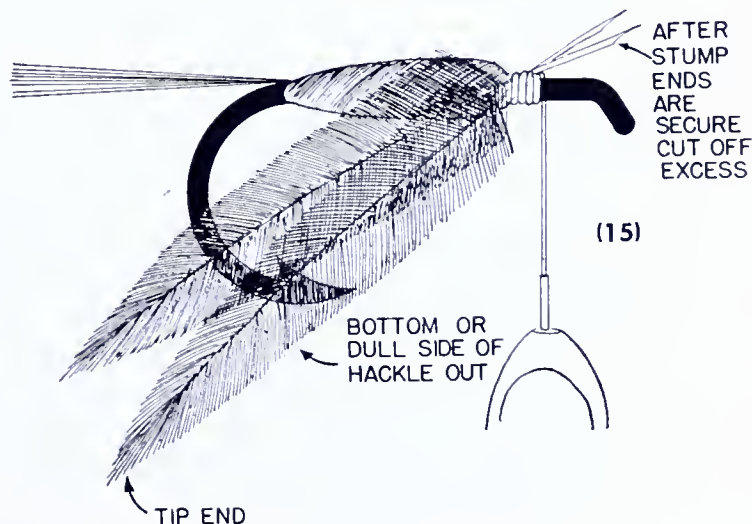
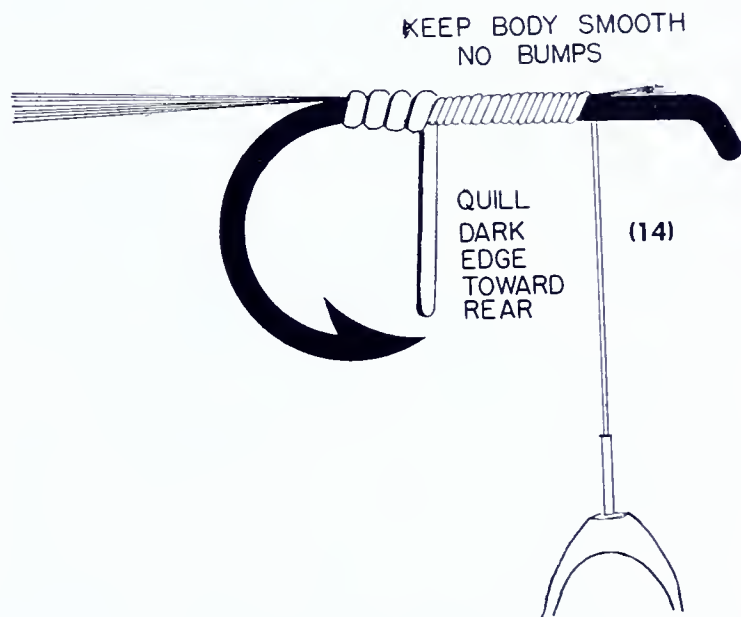
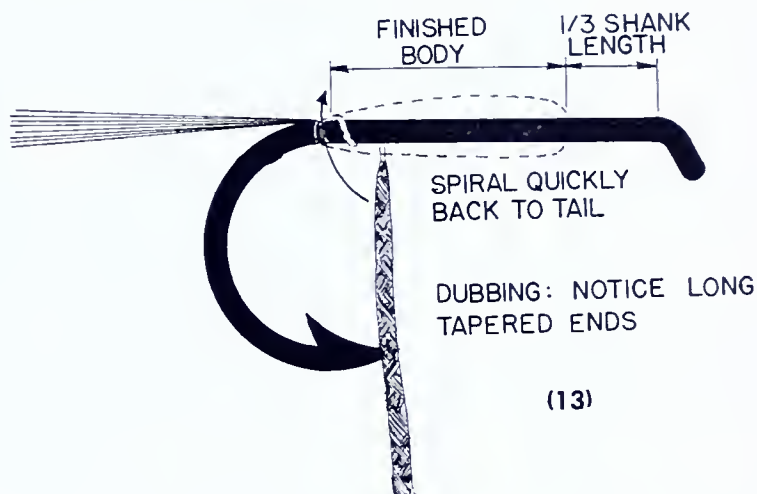
All fly bodies are wrapped on in precisely the same manner. Of course, they may vary in thickness and taper but the procedure is the same.

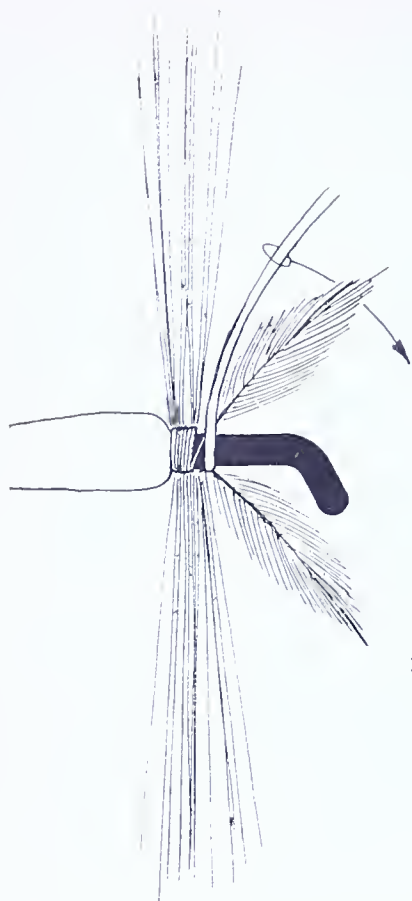
Diagram No. 11 illustrates the ribbed body. It shows the procedure and the correct order in which the body and ribbing material are tied on.

After the tail is secured, work the tying silk to the bend and tie in ribbing material here, (1). Now tie in body material (2); and spiral tying silk up to one-third distance of eye. Wind body material and tie off as previously described. Next, spiral ribbing over body and tie off. For the dry fly I prefer to have the body slightly tapered from the rear to the front end. Most fly tyers have trouble with the ribbing; in fact, many believe it is impossible to wind the ribbing so it will not slip. The way to overcome this difficulty is not to take any extra turns around the butt end of body before spiralling is started, nor to take any close turns in front of the body before tying off. Start to spiral the ribbing material immediately and when the front end of body is reached, tie it off at once. In addition, the spirals should be equi-distant apart on bodies that have the same diameter. On tapered bodies, the spirals should be progressively wider as one winds from the rear to the front of the body. A little experimenting on the part of any tyer will soon iron out this trouble.

(Diagram No. 12)

There are many methods commonly used for fixing dubbed bodies. Diagram 12 shows the easiest and best method. After the tail is secured, work the tying silk to the position shown in the diagram, one-fourth up from bend. Now, hold the tying silk taut, with left hand three to four inches below shank of hook. To attach the dubbing to the tying silk, take a little fur between the thumb and finger of right hand and

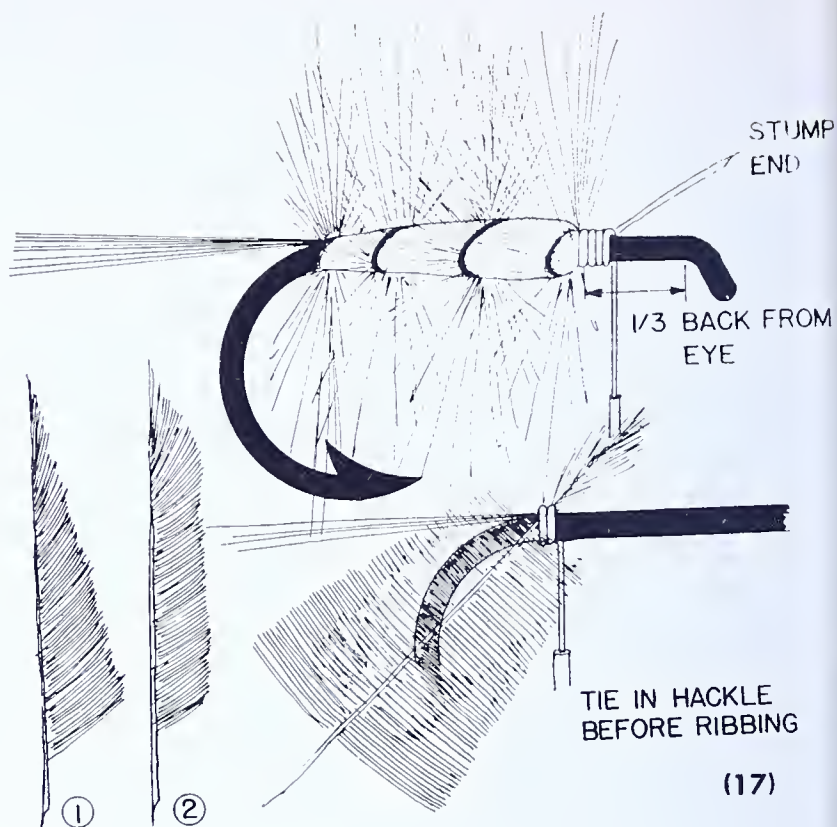




2ND HACKLE:
TIE OFF ON TOP

1ST HACKLE:
TIE OFF ON BOTTOM
& CUT OFF EXCESS

(16)



(17)

lay it on the under side of tying silk close to the shank of the hook. The index finger, at the first joint, should be placed under the dubbing to hold it against the tying silk. Now, squeeze tightly with tip of thumb as shown in diagram, and spin smoothly until tip of thumb reaches beyond end of index finger. Reverse operation without releasing pressure. Release thumb and finger; then take a little more dubbing and spin on below first. Repeat until you feel you have enough for the body. I like the dubbing to be spun on spindle shape with a longer taper at each end as shown in Diagram No. 13. After you have dubbed several dozen bodies, you will have no difficulty judging the correct amount of fur to use. Some feel wax is beneficial if applied to the tying silk before spinning on the dubbing. However, I believe they are following an old tradition passed on by the English tyers who did not have the advantage of a bobbin. I have no use for wax of any kind for any fly tying operation.

(Diagram No. 13)

You now have the fur secured to the tying silk. Notice you have a little space between top of dubbing and shank of hook. Take bobbin in right hand and take up excess tying silk until dubbing just reaches the neck of the bobbin. Wind back free tying silk to bend of hook and wind body just prepared toward eye, building up body with slight taper as shown by dotted line overlapping if necessary. Stop one-third distance back of eye. If you have too much dubbing for the size hook you are tying on, pick off excess with thumb and finger of right hand. If you want the

body to be fuzzy, as is often the case, take a dubbing needle and pick out fur until you have the desired effect.

(Diagram No. 14)

Quill bodies are quite easy to wind after one acquires the "light touch." I feel it is best not to start tying patterns with this type of body until you have tied several dozen flies. When using peacock eye quills as diagrammed, tie quill in by butt end so that dark side faces rear of fly. Be sure the shank of hook is smooth. Since this quill is not very substantial, many tyers rib it with fine gold or silver wire. You can rib it either clockwise or counter-clockwise. This greater strength of wire will help prolong the life of this quill body.

(Diagram No. 15 and No. 16)

We are now ready to tie a hackle dry fly. Remember, this dry fly is being constructed so that it will float on the surface of the water. Be careful in the selection of hackle. First of all, the tail material should be from a large hackle (preferably throat hackle) with clear, stiff fibers. Instead of using only a few as you did in the wet fly, tie in enough fibers so that the tail and hackle will be strong enough to hold the hook clear if placed on a flat surface. Now, build up the body. Select two hackles for the size hook you are tying on, and strip off the fuzzy part at the stump end; in fact, you should strip off the bottom third. Otherwise, you will have trouble because a heavy quill makes the hackle very unruly

to wind and it will be very difficult to make the fibers stand perpendicular to the shank of the hook. Tie in as diagrammed with the dull or bottom side facing out. Many tyers lay the hackles back to back, but I find a better fly results if they are tied in as described above.

Now, take the top hackle and wind as close together as is possible, with dull side facing eye. Do not continue winding until tight up against eye. If the hackle is wound too close to the eye, you will not have room to properly finish the head. Tie first hackle, when wound off on under side diagram (16). Take second hackle and make one complete turn against rear of first hackle, then work up through first hackle toward eye and tie off on top. It is a good idea to move the hackle pliers back and forth at the same time you are winding the hackle. This will help to avoid bending down the fibers of the first hackle. Complete fly with half hitches or whip finish (Diagram No. 18).

(Diagram No. 17)

The "palmer" type dry fly is just a term used to describe the hackle-ribbed body of a fly. Some patterns are tied without and others with wings. Any

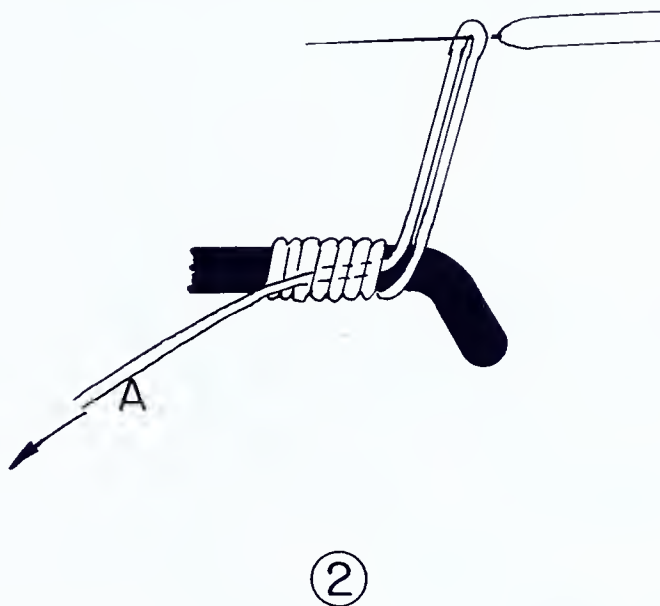
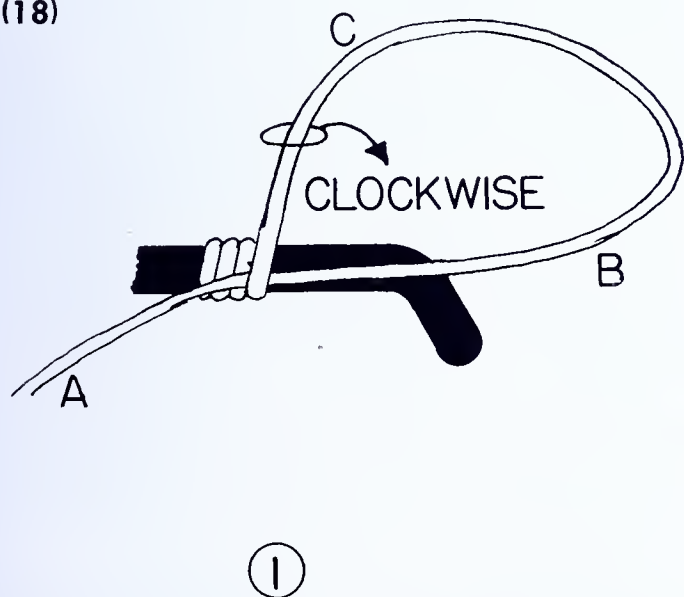
the webbing at the stump end and tie in by stump end. I do not stroke fibers back with this hackle as I believe this stroking appreciably weakens the hackle fiber. In both methods, hackles are tied with the dull side out so that the dull side will face the eye when the ribbing is complete.

When tying a "palmer" wet fly, the top or shiny side of the hackle is out and faces the eye when the ribbing is complete.

Before starting to tie this fly, carefully study Diagram No. 11. Hackle is now taking the place of tinsel or ribbing used in Diagram II.

Now we are ready for the actual steps. First, tie in the tail; next, the ribbing hackle; and last, the body material. Wind on body material and tie off one-third distance back of eye. Take hold of ribbing hackle with hackle pliers and immediately begin to spiral. As soon as front end of body is reached, tie off. The reason for this procedure was thoroughly explained under diagram No. 11. Complete fly as described in diagrams No. 15 and No. 16. Be sure that front hackles are tied in so that when they are wound on they will make contact with the ribbing hackle. There should be no space between ribbing and front hackle.

(18)



kind of body may be used.

Before you start tying, let us discuss the ribbing hackle. Some tyers always tie in hackle by the tip end and some go so far as to strip fibers from one side. On some hackle, the fibers will be progressively longer from tip to butt end as (1), while on others the fibers on the upper two-thirds of the hackle are quite even in length as (2). To me, this variation in fiber length is the determining factor in how I tie in the ribbing hackle. If the hackle is decidedly tapered, tie in by tip end. However, first hold hackle by tip and stroke fibers down toward stump end. This will allow you to tie in tip end without having too many fibers tied under.

If I have a relatively even fibered hackle, I remove

(Diagram No. 18)

Every tyer should know how to make the whip finish. After the head of the fly has been formed, throw on one half hitch. Form loop as in (1), holding top of loop (C) between index finger and thumb of right hand and bottom (B) with left hand. After (C) clamps (B) against shank, let go of (B) and wind clockwise using both hands to make additional turns. Each turn must go over tying silk between (A) and (B). When sufficient turns have been made (four or five), insert dubbing needle in loop, hold firm and draw tight by pulling at (A). Slip needle out as knot pulls tight. There are special tools for this knot but, with practice, one can tie it more quickly by hand.

Pickereel Are For Everyone

By HEINZ ULRICH

It was in the hottest part of a July day when nothing was stirring except two fishermen who didn't have enough sense to get out of the midday sun. We were trolling, going very deep and hoping against our better judgment we could entice a bass with some of our offerings.

I was using a spinner-minnow combination that usually does wonders but wasn't getting a look-see. Hank became radical and put three minnows and a nightcrawler on one hook and lowered away. I was annoyed and suggested if we were just going to horse around we might as well quit. He wouldn't have any of that.

Suddenly his pole gave a little twitch and some line ran out. He let it run. We knew from the strike it wasn't a bass because it was a sideways run and seemed

ploded into a series of leaps desperately trying to dislodge the hook.

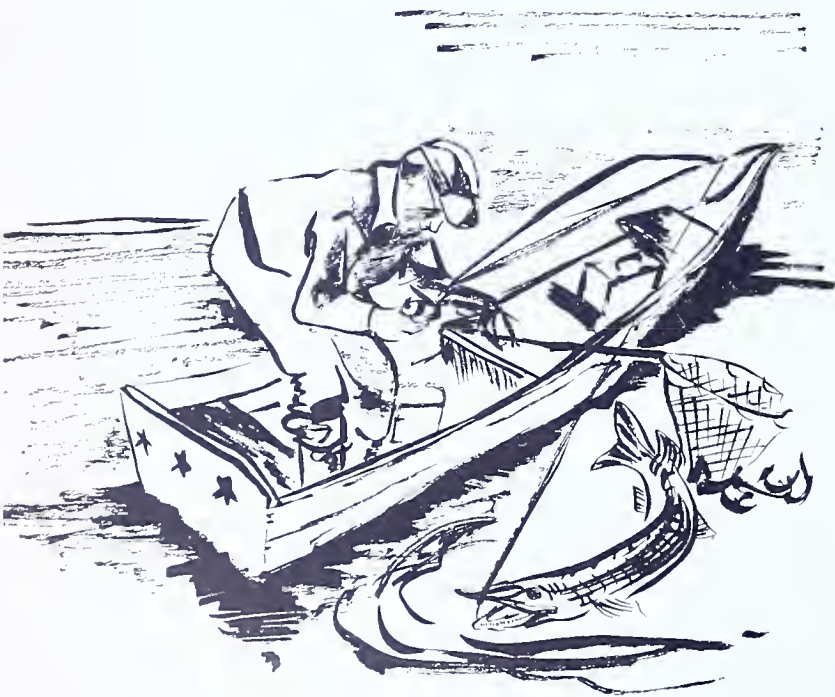
This was the first time we saw him, I'd figured him for a hungry perch but instead it was a streamlined chain pickerel fighting to free himself. We boated him in a few minutes and he weighed in at close to three pounds—a real prize considering that he was taken at midday.

Every pickerel I have ever caught has always given a good account of himself in the fight department and other fishermen I have talked to agree. It is an unfortunate thing that this fish so closely resembles his big brothers the great northern pike and the muskellunge. Being the smallest member of this family of sports fish he naturally is overlooked, even though the most sophisticated of fishermen agree that on light tackle he is quite a scrapper.

The only proper equipment for pickerel fishing of course is light tackle because the biggest of chain pickerel weigh from 5 to 7 pounds while the average catch weighs in at a pound or two. Grass pickerel weigh even less. As long tackle is light and in proportion to the fish's size it doesn't matter what style of tackle is used for pickerel fishing. Either a spinning rod, a bait casting rod or a fly rod is good. My favorite is a fly rod because I have always liked the way they feel. Aside from light equipment the only other special tackle needed is a small piece of gut or nylon leader above the hook to protect the line from the fish's small sharp teeth.

Pickereel are famous for their audacity to strike anything that swims and sometimes a small pickerel will actually hit a lure almost as big as itself. These fish prefer a rapidly moving lure and hit them with much more lust than one that is being worked slowly. They have a habit of following a lure a great distance and are often known to strike it within a foot of the boat. Another thing about them is that they are not fussy about the particular type of lure they will hit for they'll smash surface lures, splashers, spoons or spinners all with the same carefree abandon when they are in a hitting mood. There is one little hint that helps bring more strikes and that is to stick by the old trick of using bright colored lures on dark days and dull ones on very bright days.

One of the most successful methods of pickerel



more delicate than those bass take. There was an awful lot of bait on his hook so he gave the fish plenty of time to enjoy it. When the fish started to run again Hank struck!

The fish was hooked solid and the fight began. He hardly applied any pressure at all to his light spinning rod. He let the fish run and pull and was getting the most out of this scrappy fighter. After a good five minutes of runs and dodges the fish was worked close to the boat. The prize didn't like that at all and ex-

fishing is to troll a minnow and work it into the weed beds or down into the deep holes around sunken logs where they like to lurk. A spinner-minnow combination or a spinner-worm combination into these very same hot spots is another sure fire way to get them. All live bait fishermen should remember to let the fish have plenty of time to take the bait for nine out of ten quick strikes only result in pulling the hook right out of its mouth thus resulting in a lost fish. These fish like to mouth bait fish and turn them round and round before actually making up their minds to swallow it; therefore, one should wait for the second run to strike. This sometimes takes agonizing minutes but it pays to wait.

Pork rind lures are the original pickerel lure of the country and still produce many fish annually. Other baits include frogs, mice, worms, a strip cut of the underside of a perch, a small sunfish, crawfish or salt water killie; as well as the following artificials; streamer flies, bass bugs, and virtually any lure made. With pickerel it's not so much what you use but more how you get it to them in an enticing manner.

A pickerel's popularity among sportsfishermen is probably the most varied of any fish that swims. In sections of the Adirondacks they are scorned and are considered in the same category of sportfish as a two inch sunfish. This is because they are so plentiful here and are taken so easily and mostly when the fisherman has his sights set after bigger game. However, in close to the cities this very same species of fish takes only a completely different desirability and become

full fledged game fish prizes. I know fishermen who have mounted them to become prizes to adorn their homes. For the most part though pickerel fall somewhere between top sportfish and pan fish; with their good fighting qualities speaking up for them and their relatively small size held against them.

Another big change in the pickerel's desirability is affected by the season in which he is caught because in the winter months they become the darlings of all ice fishermen. Unlike the bass pickerel stay active all year long and are ready to snap at bait throughout the coldest months. The way to fish for them is to cut holes in the ice 12 to 18 inches wide and lower lines of live bait down them. The lines should be fished at varying depths from 2 to 20 feet until the fish are located. If the lines are attached to tip ups several holes can be fished. Another enjoyable way is to fish with spoons or spinners and jigging by jerking them up a foot or so and then letting them drop back.

Fish caught in the icy water of winter are delicious. Pickerel then are wonderful tasting just as they are throughout the year when proper care is taken of them. During the summer months these fish should be cleaned almost immediately for they are soft fleshed fish and tend to pick up a distasteful flavor rather quickly if neglected. I like to skin pickerel too before I eat them because then the sweet succulent flavor of the meat can best be enjoyed.

I enjoy fishing for pickerel. I consider them good gamey sportfish.

ANGLER QUIZ

By Carsten Ahrens

Common Fish Terms

- | | |
|---------------------|--|
| — A. Anadromous | 1. What egg laying fish (like bull heads) are called. |
| — B. Catadromous | 2. What living-young bearing fish (like guppies) are called. |
| — C. Redd | 3. Growth rings on fish scales. |
| — D. Oviparous | 4. Egg-laying. |
| — E. Viviparous | 5. Fish that go to sea for egg laying (eels). |
| — F. Oral Gestation | 6. Scientific name for the Class of fishes. |
| — G. Annuli | 7. The young of fish. |
| — H. Spawning | 8. Brooding eggs in the mouth (bull head style). |
| — I. Pisces | 9. A fish's nest. |
| — J. Fry | 10. Fish that go up fresh water streams for egg laying (salmon). |

Answers on Page 19

Fishermen

By



JOSEPH SCHULD (Kingston) enjoys fishing and so thoroughly admires all fish that he took upon himself to whittle models of every specie of salt and fresh water fish from soft pine blocks. And the fish are painted so life-like, that if placed in water, you would expect them to swim away. It took several years of spare time whittling to complete the gigantic number of fishes. The completed collection of fish has been displayed many times in sport shops.



KENNETH SHINER (Nescopeck) builds and collects fine bamboo rods. Realizing trade restrictions with Red China prevents importation of cane, Kenneth assembled a good supply of rods, which include several dozen fly and spinning rods, before the supply of bamboo joints became exhausted from tackle houses. The rods are all beauties, with the best fittings—cork grips, nickel silver ferrules, screw locking reel seats and guides wrapped to perfection. The rods fall into trout, bass and bait fishing categories.

A tomato can filled with worms and a long cane pole are the responsible articles for kindling an intense interest in fishing for many Pennsylvania Anglers during their early years. And from this boyish pastime of angling for whatever fish would bite in the old swimming hole, many anglers are inclined during later years to delve far into the fine and intricate points of this outdoor activity. The direction this interest in fishing takes varies widely from one individual to another.

One group may find their interest centering chiefly on casting with bait, fly and spinning tackle, and acquire great skill at this part. Top tournament casters who star in the fishing clubs' contests exemplify this clan of anglers. Another group may channel their interest toward a certain species of fish, perhaps the black bass, and collect quantities of plugs and spoons. They excell in this part. Still others may find flies and trout fishing, or rod building, or just plan fishing for catfish more to their liking. Of course, all are pretty well rounded anglers, but usually one phase becomes their pet pursuit. And the fact that there are so many avenues to explore in this sport is one of the basic reasons that it boasts so many followers today.

Near my home here in Pennsylvania, live five fishermen who have become outstanding examples of this diversified interest in fishing. Many other anglers scattered across the Keystone would also fit among these

L. SCOTT JOHNSON (Berwick, Pa.) has accumulated over 500 plugs and spoons during 50-years of fishing. You name the lure and ten chances to one, it is in the collection, for practically every known lure manufactured in North America and Europe is represented. Not every plug goes fishing on each trip. Several dozen of the most appropriate are selected on the basis of the type fish and the location of the pond or stream. Surprisingly, the majority bear the marks of battle.



t Pursuits

R

pages, but the five shown here illustrate how far the angler can travel from that early cane pole and can of worms.

One of these fishermen shown here has acquired an unbelievably large collection of spoons and plugs which he has gathered over a 50-year span of time following the black bass trail.

Another has become fascinated with trout and flies, and has tied the fantastic number of 40,000 feathered hooks in the past 17 years. Trout is his meat.

A third angler simply admires fish so thoroughly and deeply, that he has taken the time to carve models of every known species of fresh and salt water fish from soft pine blocks. And they are painted so life-like that you would expect them to swim away if placed in water.

Of the two remaining, one assembles quality bamboo rods, while the other angler fancies fishing licenses and has every button he has purchased since 1927.

These, like most anglers, began fishing as youngsters with a cane pole and can of worms at their favorite swimming hole. But they have progressed far in their chosen field since that youthful beginning. And one thing they say unanimously, almost in chorus, is that to pursue one of the many fishing fancies adds extra enjoyment and satisfaction to this appealing outdoor activity.

ALL FIVE of the fishermen shown here and the many others across the Keystone who have become fishing "specialists," had an intense interest in fishing kindled when they were youngsters along the banks of their favorite fishin' hole. We could easily learn from these particular fishermen and find new satisfaction in this already appealing outdoor activity.



FRANK MARSICANO'S (Berwick) first fly, tied in 1941, was a bedraggled Light Cahill. But that fly caught nearly thirty trout before it unraveled. Since then, he has tied 40,000 trout flies, practically every pattern in the book. And he has gathered something like 125 quart jars of top grade feathers from local farm chicks and game bagged while hunting. Evenings not spent on trout stream, after closing his barber shop, are spent tying favorite flies to coax cagey browns to net.



JOE MASSINA (Berwick) has saved every fishing license he has purchased since 1927. That's 31-years of fishing. Joe says that fishing, like business and the economy, has its ups and downs. Some years are better than others. He contributes this to the type of weather (hot or cold) and amount of rainfall. Cool summers with normal or above rainfall reflect good fishing. The buttons help to bring an amazing amount of information to his mind about past years of fishing.

Gets Off To A Flying Start!



The GOOD OUTDOOR MANNERS EDUCATIONAL PROJECT, presently being conducted by the Pennsylvania Forestry Association, and which was

launched throughout the schools of Pennsylvania last month, has gone into "high gear" activity.

Just what name will finally be judged appropriate for the GOOD OUTDOOR MANNERS RACCOON will, of course, be selected from the thousands of suggestions being submitted.

The Raccoon will soon become the symbol of good behavior and conduct in outdoor activity and will serve to discourage selfish and inconsiderate conduct which is constantly undermining and reducing the opportunities for outdoor recreation.

Now for a name. Put your thinking cap on and study the idea thoroughly. Help establish the Raccoon as a symbol or monitor of good outdoor manners by devising a name which may well become a national slogan for good outdoor relations and behavior.

Some Folks Say:

GETTIN' ALONG

.....

Ever wonder why some sportsmen are such a cantankerous sort? Accordin' to the dictionary a sportsman is supposed to be the very symbol of good-hearted fellowship. This bein' the case you'd think that they, along with the rest, would go out of their way to get along. They don't.

Of course Webster probably never reckoned that these particular sportsmen would be involved in issues dealing with such serious things as the conservation and management of soil, water, timber and other basic resources, as well as the management of fish and wildlife. These men discovered that their sport depends on managing basic resources and that fishing and hunting are the end reward of taking care of the land and water.

Getting involved in such issues in this day and age is explanation enough, to some, of why they don't get along. Most folks don't look too kindly on a principle that will deny "progress." As a result, these men usually aren't among those winning local popularity contests. They aren't too concerned about such things. They realized long ago that their decision to act on conservation issues would not be a popular one in most cases.

Such a decision was not easy to come by. They knew that they would be taking the chance of sacrificing friendships, business contacts, and the like. In light of this some folks are surprised to hear that more and more sportsmen are deciding to fight for what they believe in.

It is fortunate that they do. Enough of them battling for the same cause may one day assure not only the future of outdoor America, but America itself.—From *Outdoor America*

The Irishman and the Dog-meat

By ALBERT G. SHIMMEL

He is a typical Irishman, handsome, loquacious, friendly, good to his family and possessing a beautiful tenor voice that can move people to tears when on rare occasions he can be persuaded to sing. Lest you are convinced that here is the perfect man let me hasten to explain that he is also a fanatical addict, a state for which I am partly responsible. It is by way of accepting this responsibility, and partly to clear my conscience that I offer this explanation.

He inherited, along with his black hair the instincts of an angler. These instincts he developed by practice until he became an expert craftsman both at the fly vise and on the stream. As the hordes of anglers invaded his pet streams he began to seek those out-of-the-way spots, that others by-passed for the places visited more frequently by the hatchery trucks.

I had discovered a number of beaver ponds on the spring branches that fed an artificial lake. Duck shooting had been the incentive to explore this marshy wilderness that lay almost within sight of the summer homes, bathing beaches and recreation area that bordered the lake. In years gone by these streams had been the home of numbers of brilliantly colored "hemlock" trout. Pickerel had followed the beavers and had found the cold water with its abundance of frogs, salamanders and small perch, to their liking. Here they lived undisturbed until I chanced to discover them. The trout were gone. But the pickerel, resplendent in his green and gold, was a substitute that more than made up for the loss.

Because of the sunken logs and drowned dead wood hickets, weedless lures were a necessity. A weedless gold colored spoon; a frog finished surface plug that buddled along the surface; and best of all, the old time pork chunk with its rind legs wiggling enticingly as it crawled along the bottom, climbed over logs and pads delighted both the angler and the pickerel.

One summer morning as I approached one of the hidden ponds I was surprised to find an angler had preceded me. It was "Irish," searching the water with his flies in vain hope of finding some surviving trout. I watched a few minutes and then not wishing to disturb him, sat down on a beaver felled tree and assembled my light spinning rod. As I assembled the combination, weedless hook, home cut pork chunk and small nickle spinner, I was aware that Irish had waded over to the bank and was watching my labor with a wink in his eye.

"So you've taken to feeding the fish dog meat," he remarked with a wide grin. "And just when I had you pegged as a real fly rod man."

His curiosity and the mild rebuke of his words piqued my vanity and aroused a desire to put this bold Irishman in his place.

"I'll give you odds that you can't hook, much less land, a fish out of your first three strikes," I challenged.

"I'm game, lead me to them."

Determined to teach him a lesson, I led the way to a spot where the opening in the deadwood jungle was less than six feet wide and terminated some seventy feet away, beyond a deeply sunken log that marked the channel of the now flooded brook. Accurate cast-



BECAUSE OF Sunken Logs, Stumps and Dead Wood Thickets, Weedless Lures Were a Necessity.

ing was a necessity and the playing of a hooked fish nearly impossible. A good pickerel lived near that log and in the past had been a willing striker at any lure that invaded his domain.

The rod I handed Irish was a home made spinning rod based on light seven foot fly rod sticks. It placed lures up to a quarter ounce in weight with deadly accuracy but lacked the stiffness to force a large fish in close quarters. He hefted it cautiously then flexed his wrist and sent the pork chunk close to a projecting stub just beyond the sunken log. He glanced at the reel and then began somewhat awkwardly to retrieve line. I was as unprepared as he for the events that followed. The big pickerel flashed up from the log and hit with enough force as to come half his length out of the



A GOOD PICKEREL Lived Near That Log.

water. Irish's fly trained wrist responded with such speed and force that the pork chunk hopped a couple of yards toward the angler, as it hit the water there was again the flash and swirl of a fish, whether it was the pickerel of the log or another we never knew. Irish had trouble with the slack. This time he had a self hooked fish. It came to the surface and with a rush headed for the dead brushwood, in a second or two the fish was off but the lure miraculously came free as Irish reeled. Almost at rod tip another smaller fish took the chunk with a vengeance but the now thoroughly unnerved angler froze to the rod and failed to even make an effort to set the hook.

It was a visibly shaken Irishman that backed to a

nearby log and sat down. He produced a red bandana and mopped his face vigorously. He looked at me with a flash of a wide grin that acknowledged both his lost wager and a tribute to the lure.

"Dog meat and chained lightning, Wow!"

At my insistence he continued his fishing, acquiring swiftly the knack of pausing for a split second at the strike to allow the fish to get the lure well into its mouth. Eventually he hung an active fish that jumped twice and as he worked it close it tangled itself so thoroughly that he was able to wade out and grasp it across the eye sockets. Having unsnarled the line and lure he waded back to the bank and sat down with a sigh of satisfaction.

We worked our way around the pond, alternating our fishing and eventually landing two more fish to match the first. By the time the sun had reached mid-morning height we had reached the spot where the Irishman had discarded his fly rod and trout basket. He produced a thermos of hot tea, unscrewed the cup and filled it to the brim with the steaming beverage. Walking down to the edge of the pond he flung the liquid toward the sunken log where the big pickerel made his home. "Drink that, you old Leprechaun, and know that an Irishman has named your water, Dog-Meat Pond.

Restored For Fishing, But !

This isn't fishing but it is a bi-product of the restoration job done for fishing mainly by sportsmen and friends on the Lehigh Canal. See "The 'New' Old Lehigh Canal" —PENNSYLVANIA ANGLER, November 1958. This scene on the canal at Catasauqua in late December is duplicated many times over and all winter long on the 25 miles of the restored canal between Weissport and Easton.



"Ducks" To The Rescue

By David H. Murrie

Information Officer State Council of Civil Defense



ON LAND the surplus Army DUKW's, or amphibious vehicles, recently turned over to the State Civil Defense forces are large heavy-cargo carriers. Here David H. Parmenter, Erie County's executive director, takes the wheel, while Kenneth Henning, of the auxiliary police and Property Officer Bartlett Dench observe the vehicle's performance.



ON WATER the vehicles become sturdy vessels affording water transport of the cargo, a steady platform for rescue and salvage operations and a ready means of reaching water-isolated points. Here the Erie County crew give their DUKW its maiden voyage in the waters of Presque Isle Bay of Lake Erie, where the amphibious machine will be berthed.

Water sports enthusiasts in several regions of the Commonwealth now enjoy a new rescue facility, if ever needed, upon the recent acquisitions of surplus Army DUKW's by local Civil Defense organizations.

C D units and the number of these highly versatile amphibious vehicles acquired by each are as follows:

New Kensington in Westmoreland County—2; West Newton, Westmoreland County—1; Allentown, Lehigh County—2; Linesville and Conneaut Lake in Crawford County—1 each; Bridgewater and Monaca in Beaver County—1 each; Harmony and Saxonbury in Butler County—1 each; West Goshen Township in Chester County—2; Sharon in Mercer County—1; Williamsport in Lycoming County—1; Sugar Creek Township in Venango County—1; and the county organizations of Armstrong, Erie, Forest, Lancaster, Northumberland and Pike—1 each, and Clarion and Columbia counties—2. Warren County also has two, one of which its C D unit purchased earlier on its own.

The big boat-vehicle is a 2½ ton, six-by-six truck, fitted with a flotation hull, propeller and rudders. The

DUKW's are powered by the standard 353-horsepower GMC gasoline engine and have a land speed of over 50 miles per hour. Their speed in water varies with conditions of current and wind.

Their original cost to the Army was \$10,129 each. The cost to the C D units, whose directors were alert to their usefulness, and snapped them up, was \$100 each, plus the cost of driving or transporting them from Army storage sites to their new quarters. All were in immediately serviceable condition, some virtually new with only a few miles on their speedometers.

Water rescue, a field to which a number of C D organizations in the state are giving increasing attention, is the most obvious task for which the DUKW's will be valuable. Possessing a large cargo hold, the ready land-water transport of heavy Civil Defense equipment such as generators, pumps and pipe is another obvious application of the vehicle. They are equipped with anchors, winches, air compressors and other water gear.



NEW THINGS in TACKLE and GEAR

Intended as a service to ANGLER readers wherein new items of fishing tackle and outdoors gear that come to the attention of the editor are introduced, with no intention of endorsement.

Address all inquiries to the respective manufacturers.

Walleye Worm Harness



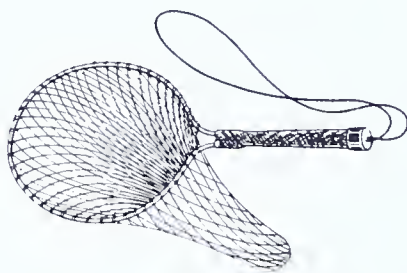
Among the line of beaded hooks, plastic worms, spinners, lures, harnesses and other items made by the D-L Tackle Company, is the D-L walleye worm harness. Harness consists of two No. 3 hooks, a No. 5 treble, six beads, a No. 6 Indiana nickel spinner—joined with 30 pound monofilament. It is the type favored by Lake Erie wall-eye trollers.

The D-L Tackle Co., Box 122,
Toledo 5, Ohio

Diamond-Grip Aluminum Stream Nets

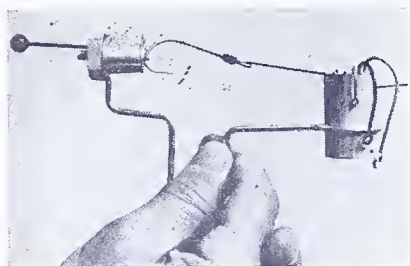
A firm grip when hands are wet and slippery. Strong tempered aluminum alloy. Resistant to corrosion. It floats.

Trout and bass net with 12" diamond grip aluminum handle. Green or white net—24" deep. Now being made available at all sports stores or—write direct to—



York Mfg. Co.,
Sanford, Florida

Hook Sneller and Leader Tier



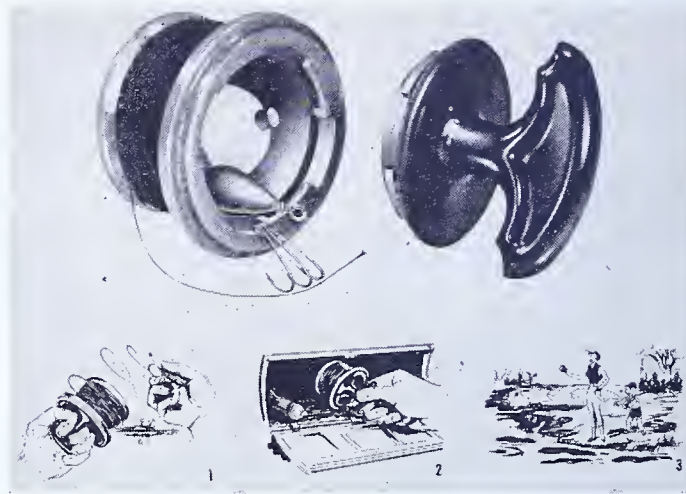
Snell or Tie any size leader material quickly and easily to any size hook with a perfect professional knot. No pinching, no slipping, the most perfect knots known to the profession.

You can buy your favorite hooks by the dozen or by the box—leader material by the roll . . . and snell or tie your own hooks the easy way.

What's more you enjoy doing it while saving time and money.

RUDY MASSON PRODUCTS
4015 W. Verdugo Ave., Burbank, California
THornwall 8-4276

New Tac-L-Reel



The complete hand-fishing kit for throw-line fishing from boat or off shore.

So practical, so easy to use, so convenient to carry Tac-L-reel is fast becoming a popular fishing tackle item.

Practical? Tac-L-reel is perfect for salt water or fresh water fishing. Made of special high heat-resistant, high impact plastics, Tac-L-reel is so lightweight that it will float in the water, yet it is so rugged it won't break if you drop it.

Comes complete with 120 feet of 27-lb. test line, sinker, bobber and hooks.

Endicott Machine & Tool Co., Inc.
Endicott, N. Y.

Dylite Minnow Bucket . . . durable, floats

The minnow bucket with everything . . . feather-like weight . . . strength . . . size . . . price! Large 13-quart capacity keeps minnows lively for days. Dylite plastic's amazing insulating qualities keep water temperature constant. Furnished with zinc-plated carrying case. Handle swings to side for easy storage. Packed one to shipping container.



Weber Tackle Company,
Stevens Point, Wisconsin, U.S.A.

It's Time For A Clean-up!

By **L. E. STOTZ**

U.S. Forest Ranger

There is a pleasant sound to Tionesta Creek as its clear waters flow through the National Forest in Northwest Pennsylvania toward the Gulf of Mexico to mingle with those of the great rivers of America—the Allegheny, the Ohio, the Mississippi, the Missouri, the Platte, the Red River and the Arkansas.

Once, this mountain stream ran brown with waste matter from tanneries that are now only a memory, and logging trains rumbled along its bank drowning out the small, pleasant sounds of rushing water and the wind in the trees.

Man has always followed the routes that running water has etched on the face of the land. A ribbon of macadam now traces the sinuous path of Tionesta Creek, carrying sleek cars along the hillside that slopes precipitously toward this fast flowing stream.

Screening the highway from the waters below are the maples, the black cherry, the beech, the basswood and other broad-leaved trees; and the evergreens—the white pine and the hemlock.

If you cruise along in your car with your eyes on the narrow road ahead of you, and with only a hasty glance from time to time in the direction of the creek, you will pass through stretches of national forest land that to a city dweller look like unspoiled wilderness. There are no billboards to smother the view. There are no cottages, or other habitations to clutter up the landscape.

But slow down until you find a wide place beside the road where you can park your car. Get out and walk along the edge of the steep bank and look down the slope. You will find that your wilderness is choked with garbage, tin cans, bottles, old car seats, moldy cartons, old shoes and soggy newspapers. A piece of cast-off clothing has caught on a limb of a tree and flaps dismally in the breeze. An old refrigerator, its door ajar and hanging by one hinge, has piled up against a worn out davenport that is wedged between

two hemlock trees on the steep bank. Let your eyes follow the trail of litter through a beautiful grove of young hemlock and down to the stream's edge 200 feet below.

Lock your car, and hike a mile or two along the highway's edge. You will find that your lovely vistas are rimmed by a giant necklace of garbage dumps strung like an endless string of beads—each a festering sore on the landscape. Like a foul contagion, they contaminate everything that they touch. The clean, woodsy smell is gone. In its place, is the stench of raw garbage, stale grease and mold. The hillside underfoot is slippery with it.

If the heavy hand of the "litter bug" were lifted from the land these organic wastes would in time return to the soil and their noxious odors would be no more. But the mountains of bottles, tin cans, old stoves and refrigerators will be a permanent eyesore unless they are laboriously carried up the steep slope, thrown into a waiting truck and hauled to an authorized dump. This can be done, at considerable expense to the taxpayers including those respectable citizens who dispose of their own garbage and trash the American way—by paying for the services of a bona fide disposal agency.

If the confirmed "litter bug" will take paper and pencil and compute the cost to him of proper disposal against the cost of hauling off a series of loads of garbage and trash to dump along scenic highways, he will find that it is cheaper to pay the small fee and have it hauled regularly to an authorized dump. If, in addition, he figures his share of increased taxes required to have some one clean up after him along the highways he will find that his antisocial methods of garbage disposal are very costly indeed not only to himself but to others who are innocent of such filthy practices.

Answers to ANGLER QUIZ

10	A	8	F
5	B	3	G
9	C	4	H
1	D	6	I
2	E	7	J



CONSERVATION ACROSS THE NATION

FRIENDS AND NEIGHBORS

According to Rex McMorris of the National Golf Foundation, there are more than 5,550 golf courses comprising some 529,000 acres of land in the U. S. The Foundation estimates there are upwards of 4,000,000 golfers in the U. S. who play at least ten or twelve times per year.

A 1954 Gallup poll determined that about 17,000,000 men and 9,000,000 women had played golf at least once some time in their lives. Total yearly participation was nearly 66 million rounds of golf (golfer-days). Thus, the golf courses support some 125 golfer-days of sport annually per acre.

Many fishing waters of comparable size to golf courses (9-hole courses average 61 acres; 18-hole courses average 143 acres) have been constructed fairly near large centers of population and are intensively managed for high usage. In this respect artificial fishing lakes are somewhat comparable to golf courses.

In one state, where detailed records have been kept, average use over several years' time on individual waters ranged from at least 102 angler days to as high as 282 angler days per acre. For the eleven lakes involved, it averaged out to 189 per acre. The lakes range in size from 32 to 80 acres each, average about 54 acres.

Each acre of golf course constructed has required an investment of capital funds averaging about \$2,470. In this regard, fishing waters appear to be an overlooked bargain for municipalities seeking economical means of providing mass outdoor recreation facilities.

Costs of building 90 fishing lakes in 32 states were summarized in a 1957 publication of the U. S. Fish and Wildlife Service, entitled *SPORT FISH RESTORATION*. The lakes have an average size of 119 acres. Total costs reported figures out to about \$530 per acre.

—*Sport Fishing Institute Bulletin*

INDUSTRY COOPERATES

A good example of how industry sometimes finds it possible to cooperate for the benefit of fish conservation is related in the November issue of *NORTHWEST PULP & PAPER NEWS*. According to the item, the Oregon Fish Commission and Weyerhaeuser Timber Company are working together to build an experimental natural "fish farm" on the east fork of the Millicoma River in Coos County to supplement and establish fish runs in coastal streams.

Commissioner Director Albert M. Day said a 10-acre pond, holding 500,000 salmon fingerlings, is intended to lower costs of raising fish in hatcheries by placing fingerlings in impounded water with a natural food supply. Weyerhaeuser installed culverts and other modifications at a cost of \$5,000 and is giving up an acre of tree-growing land. "In addition, the company has voluntarily spent approximately \$8,000 to modify the new channel bed as a fisheries protection measure," said Day.

FISHERY RIGHTS

Boise, Idaho attorney Bruce Bowler told the 1958 convention of the Western Association of State Game and Fish Commissioners that fishing is a beneficial use of water. He believes it has a definite legal standing under the "first-in-time, first-in-right" doctrine applicable in most western states.

It is his opinion that where the fishery was first, it has a water right both as to quantity and quality of the water involved sufficient to properly sustain the fishery, which is subject to legal protection in favor of the public interest.

He explained that the quantity of water that could be expected to be included within such water right would be that reasonably sufficient to sustain the fishery. That is a flow sufficient to retain the fishery that held the prior beneficial use. He said the qualitative standards of the water would pose a similar legal problem.

—*Sport Fishing Institute Bulletin*

NEW LOOK URGED

Conservation law enforcement programs and personnel must be attuned to present and future needs in order to serve the public effectively, according to Howard S. Willard, director of law enforcement for the Massachusetts Department of Natural Resources. Willard said that the law officers' activities must involve much more than the attainment of an impressive arrest and conviction record.

Persons having knowledge of fish and game biology and forestry should be encouraged into the enforcement profession, Willard said. He emphasized the need for training such candidates in "enforcement techniques and police sciences."

"I prophesy," he concluded, "that the old-style game warden will fast become a vanishing entity. Of necessity, he must take on new breadth and scope in order to cope with complex problems that society has imposed on our basic resource heritage."

ANTI-RECESSION INFLUENCE

A feature item in *THE WALL STREET JOURNAL* recently underscores the importance of outdoor recreation on the American scene: A special *Business Bulletin* states that "Recession helps to put zip into the sales of some products. It starts off as follows:

Chicago sporting goods stores, for example, report volume is smartly ahead of a year ago. One proprietor explained, "People on short weeks are doing more fishing and participating to a greater extent in other sports activity."

Increased recreational fishing is a trend of our times, connected with increasing leisure time. How this leisure time is created doesn't seem to matter. More time off from the job means more fishing pressure—and increased need for sound fish conservation program. . . .



Winter-Sleeping Wildlife

By Will Barker

36 xiv pages. Illustrated with thumbnail sketches by Carl Burger. Published by Harper and Brothers, 49 East 33rd Street, New York 16, New York; 1958. Price \$3.00.

WINTER-SLEEPING WILDLIFE chronicles the winter habits of many familiar North American animals—woodchucks, bears, snakes, lady beetles, prairie dogs, carp, and others. While the hibernation of each animal is the main facet of each discussion, the author has interjected descriptions of the mating habits, physical characteristics, and other interesting life history information for each of the many animals covered.

In all, it adds up to a fascinating account of a much discussed yet little known factor in nature. What stimulus causes many animals to hibernate, what are the characteristics of the various hibernation patterns, and what are the true body functions and processes that permit animals to remain inactive for so long a period of time? This book should provide fascinating reading for all persons ranging upwards from the subteens.

"Perspectives on Conservation"

Edited by Henry Jarrett

Published for Resources for the Future, Inc., by the Johns Hopkins Press, Baltimore, Md.; 260 pp.; \$5.

This is a collection of essays on America's natural resources and what has been accomplished in conservation during the last half century. The book contains essays by: John Kenneth Galbraith, Ernest S. Griffith, Luther Gulick, Edward S. Mason, Thomas B. Nolan, Gilbert F. White, Bushrod W. Allin, Robert C. Cook, Harry A. Curtis, Samuel T. Dana, Charles M. Hardin, Henry C. Hart, Robert W. Hartley, Philip M. Hauser, Samuel P. Hays, Joseph L. Intermaggio, Minor S. Jameson, Jr., Robert E. Merriam, Sigurd F. Olson, William Pincus, Paul B. Sears, Byron T. Shaw and Abel Wolman.

Book Review

A Field Guide to Reptiles and Amphibians of Eastern North America

By Roger Conant

366 xiii pages. Illustrated with more than 1,100 photographs and sketches, full color. Published by Houghton Mifflin Company, 2 Park Street, Boston, Massachusetts; 1958. Price \$3.95.

This is another addition to the Field Guide Series of Houghton Mifflin, which has a wide reputation for accurate portrayal and representation of the differences which enable knowledgeable persons to distinguish between various plants, animals and other of nature's creations.

This book is billed as "the most complete, authoritative, and up-to-date guide to the reptiles and amphibians of eastern North America yet published. It includes every species and subspecies of turtle, crocodile, alligator, lizard, snake, salamander, newt, frog, and toads found in the area . . . more than 3,000 living reptiles and amphibians were assembled over a period of four years in order to obtain the photographs which are reproduced on the plates in this book."

Since the area in which a specimen is found often is a key to its identification, 248 distribution maps have been included. Other chapters dwell on catching and transporting reptiles and amphibians, and care in captivity. Poisonous snakes are described at length and a short chapter deals with the snake-bite problem.

The author has been Curator of Reptiles at the Philadelphia Zoo for more than 20 years, and his wife has been the Zoo's official photographer for about half that time. The excellence of this book bespeaks their individual abilities.

The Old Ranger Initiates Pee Wee

By MERLE PAYNE

The sun was shining bright and warm as it does in the spring when everything is coming back to life with new color and glory.

A robin, newly arrived from the South, flew down from the cherry tree in which it was building its nest, to the newly plowed garden where Pee Wee and the old ranger were digging garden worms for the anticipated opening day of trout season in Pennsylvania.

Before continuing this story, I had better introduce the old ranger and Pee Wee. To the readers of the PENNSYLVANIA ANGLER the old ranger is already known, and Pee Wee is his youngest daughter, aged thirteen.

The old ranger has been stocking trout fingerlings and helping to improve the small trout streams in Erie County Pennsylvania for several years, with the help of his brother Chuck.

As we all know, there are several ways and different baits to catch early season trout, but a large percentage are caught on the old standby, garden worms. That is the reason Pee Wee and the old ranger were digging worms.

The week before, the old ranger, his brother Chuck and Pee Wee had just finished planting fingerling trout in the small streams of Erie County; mostly small streams that empty into Lake Erie.

Each year these streams have a number of large trout in them that should be removed. If not, they will devour a lot of the small fingerlings. So we feel that they should be caught and that is what this story is about; also it is Pee Wee's first time trout fishing.

Pee Wee had spent a lot of winter evenings watching the old ranger clean and oil reels, sharpen hooks, pinch the barbs down on some hooks as he never uses a hook on the small streams without the barb either filed off or pinched down, because the majority of the trout he catches he returns to the streams. Also the old ranger rewound the rods and varnished them.

Well, finally the big day arrived and the alarm clock rolled us out of bed at 3 A. M. After a good breakfast of pancakes and sausage with lots of maple syrup and steaming cups of coffee, we were ready to go, as the season opens at 5 A. M. on April 15th in Pennsylvania.

The streams we intended to fish were all spring water except for the rain and melting snow that gets

into them. I believe that spring fed streams are a little warmer early in the spring than the large stream.

I have often seen opening days with rain, snow and sleet but there are a few nice, warm days, too, which we were lucky enough to have this time. The ground was still frozen but the snow was all gone except in a few small spots where the sun couldn't hit.

We planned to fish several different streams. Some of them flowed through vineyards, pasture fields, meadows and gullies, so we had a variety of streams to try our luck on.

The first stream we tried started from a tile drain in a meadow. We started fishing at a culvert where a blacktop road crossed the stream.

Pee Wee threaded a nice worm on a No. 6 hook and let it drift into the mouth of the steel pipe. It didn't go very far before a nice fish had it and it sounded like a muskrat was tearing around inside. I told her to keep the line tight and the steady pressure soon brought the trout out into the open. Was she ever surprised to discover she had a fifteen inch brookie. Pee Wee had her first trout!

Gradually we moved downstream to an old stump that had a lot of muskrat holes in under it. On earlier fishing expeditions I had caught a good trout under many times. I cautioned Pee Wee to stay back from the bank and let her hook drift in under the stump which she did and was rewarded by having a nice trout come out after the bait. But she was too fast and jerked the hook away from him and he wouldn't come again.

The farther down the stream we went the larger the trout got and in places it had some undercut banks. We had left the meadow and were in a pasture field where the old ranger had planted some willows that were doing very good in making shade to keep the water cool and produce insects for food.

Pee Wee was letting the worm roll along the bottom near the bank and a small trout came out and grabbed the worm and darted back in under the bank. She pulled him out but he was only six and a half inches and we don't keep any trout under ten inches, so I told her to ease the barbless hook out of his mouth and return him to the water. She was surprised to see him disappear so fast.

Every few feet we saw some of the little baby trout we had planted during the past week.

Almost every muskrat hole had a trout in it. As we moved downstream the stream got larger and so did the trout. We came to a spot where the creek went under a trolley track railroad. This was always a good place for several keeper trout and it didn't take Pee Wee long to catch three more nice ones.

Crossing the tracks we found ourselves in a farmer's field with grapes on one side and tomatoes and asparagus on the other. I explained to Pee Wee we must be careful not to walk on the farmer's crops and that we should never pick and eat anything from a farm that we never fished on as that is how the farmer makes his living.

This farm had several driveways across the creek and each one had one or more nice trout under them. By now I had six and Pee Wee had four. The farmer who owned the land was trimming grapes and came over to see how we were doing. He was surprised to see so much nice trout had come out of his creek. We offered him some but he said he didn't want any, then he gave us permission to fish on his stream any time.

We thanked him for his kindness and left to try our luck in another stream.

Stopping at a Diner we had some lunch and then headed for another small creek.

This one also started in a meadow and then flowed alongside the same railroad for about three hundred yards passing under it and through a small woods. It had a lot of willows and small brush along the banks, so I left my rod in the car and helped Pee Wee as the fishing was not so easy.

Pee Wee lost several hooks before she got the hang of it and caught the other four she needed for a limit.

Before we got out of the woods we met two boys about nine or ten years old and they told us that they couldn't catch any trout. I fixed them up with some leader and new hooks, then showed them how to fish in the right places, around stumps and logs. It didn't take them long to begin catching trout and we left for home to show mother what we had and to enjoy a nice warm supper.

Pennsylvania's Clean Stream Program

In a special "report to the people," the Pennsylvania State Health Department describes the success of water pollution control measures. The cooperative effort of government, business, civic and conservation groups was praised by the department.

Dr. C. L. Wilbar, Jr., State Health Secretary and chairman of the Sanitary Water Board, commenting on the report, said that Pennsylvania has been credited with doing more than any other state to control pollution along its more than 4,400 named streams.

He noted, however, that there is still "much to be done" before the job of controlling water pollution can be completed. As examples, he mentioned that

54 percent of sewered communities and 30 percent of waste producing industries are not yet adequately treating their wastes.

"In the final analysis, it is up to the people themselves to make our waters secure for present and future use," Dr. Wilbar said.

This calls for strengthened laws, continual surveillance, research into new sources of pollution and methods for controlling sewage and industrial wastes, knowledge of the importance of clean streams and support for community, state and national efforts to bring about cleaner, more healthful and more beneficial water resources.

SAVED BY AN "ICE HOLE"!



A fisherman recently fishing through the ice in the Allegheny River hooked a nice muskellunger, only to find the hole he had cut was too small to land it. Before he could cut the hole larger the muskie suddenly became just another "one that got away." Could happen to you, so make sure you cut the hole plenty big in muskie territory.

—Kenneth G. Corey, Warden
Warren County

Tall Tales

By RONALD E. GUMTOW

Campfire on a gravel bar, the aroma of strong coffee and some good fishin' buddies—these set the stage for the tall ones. Usually these stories are either “wallopers” or so subtle it takes a careful listener to notice the shading between truth and untruth. These are usually about a fish—and somewhere, a fisherman. Now I know some that are not only new and different but true, and they'll actually bring up some mighty interesting comments—especially about your ability to spin a yarn. Next time you're out get the talk around to breeding habits of fish—and duck when you swear they're true!

The best thing is to start out on one that sounds a little rare but credible. Spawning habits of the three-spined stickle back is always a good one. This little fish builds a nest of twigs and vegetation that looks like a barrel open at one end. He uses brains instead of brawn to make the second opening: after finding a cooperative wife he chases her out of the nest . . . through the unopened end. Result—one back door.

Then there is a small minnow in Europe that cares not a bit for domestic life. The female deposits her eggs in any mussel (clam) that happens to be around, then goes her way leaving her future children in the care of the unlucky, unknowing mussel.

By contrast, the marine butterfish really care for their eggs. Both parents take their responsibilities seriously. They roll the eggs in a ball, and when the male isn't wrapped around them the female is. A close relative of this butterfish is more the gay blade type. The male has a bony projection extending out of his skull. The eggs are in two clusters attached to each other by string-like material. In some way the string becomes entangled about the bony projection and the male swims with his children-to-be in clusters, one cluster to each side, like pearls on a string.

If eyebrows have not raised yet the spawning habits of the South American lungfish should bring them up. This peculiar fish lives in swamps. During spawning the male burrows down into the peaty bottom of the swamp, and the female lays her eggs at the end

of the burrow. She leaves and the male stays to guard the eggs. Should there be too little oxygen in the water in the burrow, which is pretty usual, this poor fish has to use an accessory breathing apparatus which allows him to breathe through his tail.

Now if your wife happens to be along on the float, and you want her to know that the male of the species does most of the work on the world, there are three interesting examples of overworked males. The Labryinthic fishes, one of which is the Betta or Siamese fighting fish, builds a nest of mucous bubbles which the male blows. After the eggs are fertilized the male catches them in his mouth and puts them in his floating bubble nursery. The larvae, after hatching, remain attached to this platform. Should they fall out of it, solicitous papa put them back.

An example of really high-level parental care is found in the breeding habits of the sea catfish. Again the poor male is saddled with responsibility. He takes all the eggs in his mouth and carries them until they hatch. Of course he can't eat, so he goes hungry till the eggs hatch. Real fatherly love and tender devotion—and think of the intestinal fortitude it takes not to swallow!

In many instances the male does most of the work in rearing and guarding the young. The Florida pipe fish goes to the extreme because of too many years of feminine dominance. The male has a kangaroo-like pouch in which the female deposits the fertilized eggs then she's off to parts unknown. The eggs develop in this pouch and hatch in comparative safety. The young are like a kangaroo: when threatened by danger they retreat to the safety of papa's pocket. After a short period of this, however, they remain on the outside and the purse strings are again safe from incursions.

You can just sit back now and listen to the remarks about your stories. You may even take the blame for empty stringers, since you must have been busy thinking up those “tall tales” during the day and forgot you came to fish.

—Missouri Conservationist

TIP FOR TODAY—Take your kids *fishing* today and you won't be *hunting* for them tomorrow!



GILBERT THE GUIDE

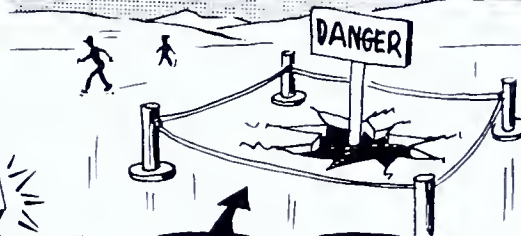
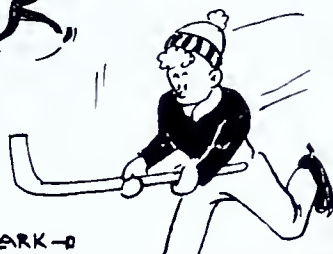
"OL MAN WINTER" PROVIDES A LOT OF SPORT & RECREATION.... BUT, UNLESS YOU OBEY HIS SAFETY RULES YOU MIGHT FIND YOURSELF IN REAL TROUBLE.

REMEMBER:

IT TAKES A SUSTAINED COLD SPELL TO FREEZE ICE THAT'S SOLID AND SAFE....



DON'T GO SKATING OR FISHING ALONE... CHILDREN SHOULD HAVE ADULT SUPERVISION AT ALL TIMES...



NEW ICE SHOULD BE AT LEAST 4" THICK BEFORE YOU TRY IT... LOOK OUT FOR "AIR" ICE (CAUSED BY SPRINGS OR SUBMERGED OBJECTS.) ROPE OFF UNSAFE AREAS.



HAVE RESCUE EQUIPMENT CLOSE AT HAND: ROPES, LONG POLES OR LADDER, BLANKETS, HOT STIMULANTS.

JOHN F. CLARK - D



PENNSYLVANIA

ANGLER

MARCH, 1959

PENNSYLVANIA FISH COMMISSION



WHAT'S THE ANSWER?

A recent report of the United Nations points out that while it took 200,000 years for the world's human population to reach 2,500 million, at the present rate of increase it will take a mere 30 years to add another 2,000 million; and by the end of the century the earth may well be inhabited by 6,000 or 7,000 million occupants. Did you realize that the year 2,000 is not as far in the future as 1914 is in the past, and with this in mind let's consider the following from Dr. Clarence Cottam, director of the Welder Wildlife Foundation:

"It is time we start getting the idea over to the rising generation that America's wealth, economic security and greatness can not be measured by the extent of its reserve gold or silver bullion nor by the amount of currency in circulation. These are merely media of exchange. The real wealth, in addition to the character, quality and health of our people, is the abundance and variety of our natural resources. It shouldn't be too hard to show our young people that a nation is rich only so long as its supply of resources is greater than the needs and living standards of its people. After that it is not self-sustaining. It should be a basic concept in social studies of the grades, high schools and colleges that no nation can permanently endure as a world power which consumes its renewable resources faster than nature, with the help of enlightened scientific aid, can replace them. We must teach our youth that national security, progress and world leadership are impossible without an abundance of basic resources and that our democratic ideals, with their high moral and spiritual benefits, will be dangerously weakened if our resources are squandered."

—*South Carolina Wildlife*

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Research Answers The Trout Egg Incubation Problem



CARING FOR trout eggs in 1897. These men didn't know how much labor the warm water hatching jars in background could have saved them if modern fungicides were available. Photo from "Manual of Fish Culture," U. S. Commission of Fish and Fisheries, 1897.

CARING FOR trout eggs 50 years later. The garb has changed, but otherwise there was no change in the care of trout eggs.



By **KEEN BUSS**

Fishery Biologist

*Benner Spring Fish Research Station
Pennsylvania Fish Commission*

Since the French government constructed the first publicly-owned fish hatchery in 1852 there has been little relief from the high manual labor requirements attending the care and incubation of trout eggs. The few advancements that have been made to date have not resolved this major hatchery labor problem to any notable degree. And it is especially acute in commercial hatcheries where as many as 35 to 40 million fertilized or eyed eggs are developed for sale each year.

The alternative to transferring the full normal labor force of a hatchery to this detail, at the expense of other operations, has been to hire interim help to see each generation of trout into and through this early stage of life.

Further, large and specially constructed buildings that lend themselves to little other use are necessary, adding further to hatchery expense. Finally, a very large supply of spring water of optimum clarity, temperature uniformity and dissolved oxygen content is needed.

Why the need for all the manpower? The procedures, all manual, are these: First, the brood trout are stripped—the eggs from the females, the milt from the males and the former fertilized by the latter. Second, the eggs are then washed and spread on trays and placed in the hatch house troughs.

But this is only the beginning. Those eggs which are infertile turn white as do those which each day die, for any one of several reasons. Untreated or unattended, a fungus develops on them which would spread to and ultimately kill the surrounding live healthy eggs. To prevent this, the dead eggs are removed or "picked," one by one, either with a modified forceps or a small syringe.

The picking process may extend through a period upwards to fifty days, depending on water temperature until the eggs hatch. And if only ten per cent of the eggs die it is easy to understand the magnitude of the egg picking job where 40 million eggs were involved. Actually, egg mortality is often much higher.



INCUBATING warm water fish eggs at the Erie Hatchery, 1949. This is the method modified for the incubation of trout eggs. Note the amount of vertical space utilized by this method.

The first break-through in reducing labor needs during egg incubation came in the early 1930's when Malachite Green, a commercial dye developed for other purposes was discovered to be an effective egg fungicide. Harmless to the eggs, malachite green at the concentration needed to control fungus, is toxic to the trout fry. For this reason, its use has not been universally adopted, and where it is used, application is halted prior to hatching time. Thus, while picking up to that time is eliminated, the activity continues to be necessary between the halt of the treatment and the time when hatching is completed.

The second break-through came in 1941 when Messrs. Simon and Roberts, of the Wyoming Game and Fish Commission, developed a method of hatching trout eggs in a newly developed facility described as a drip incubator. This reduced the amount of water necessary for egg incubation. It also reduced space needs. During the 1950's this unit was modified and adopted in California, then Sweden for the incubation

THE LONG tedious daily task of picking dead eggs by hand. (Dead eggs appear white.)



of both trout and salmon eggs. It was later adopted by other hatchery operators throughout the world.

Because of the amount of labor, space and water still involved, it was decided by the staff at the Benner Spring Fish Research Station of the Pennsylvania Fish Commission that further study of ways and means to reduce these elements would be a most worthwhile research project. It was undertaken in May of 1956 and numerous approaches were tried and discarded before a ray of hope presented itself. Hatching jars constituted that ray. Actually, jar culture of eggs of other fish species such as whitefish and walleye had been practiced for many years. However, the advancement of new ideas in fishery management led to the abandonment of this culture in many places and the jars were stored in remote corners.

The jar method of incubating the eggs of some species is known to be very efficient. It allowed the jars to be arranged in a manner that permits the utilization of vertical space in hatchery buildings and enables one man to care more conveniently for large quanti-

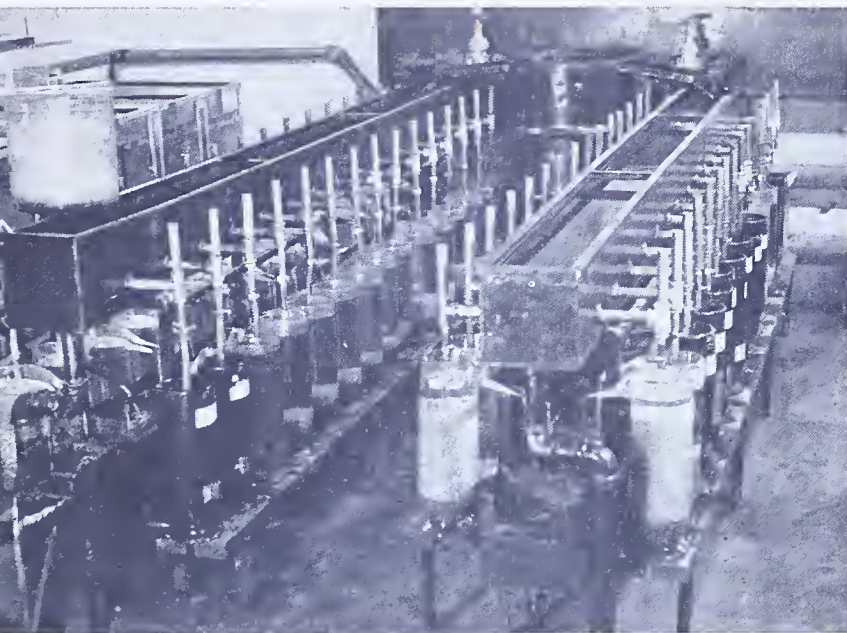


FLOATING DEAD eggs by means of a salt solution from eyed eggs which are to be shipped. Eggs which are to remain at the hatchery need not be cleaned. (See text.)

ties of eggs.

Adapting the jars to the culture of trout eggs, however, presented new problems and posed the need for a modification of the methods employed heretofore for the eggs of the other species.

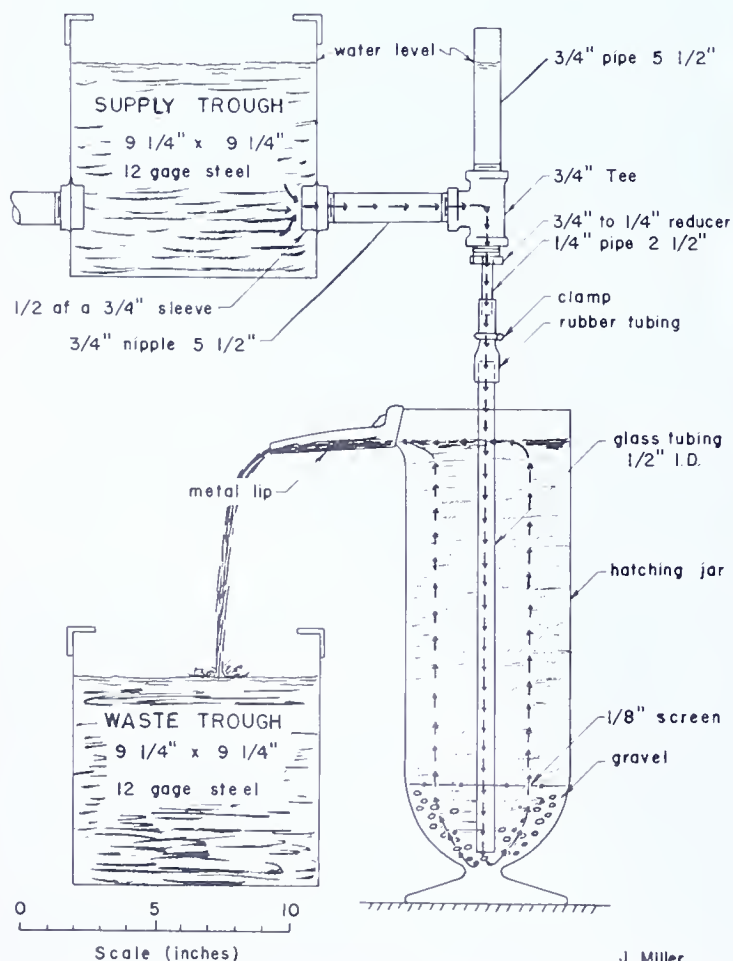
The first problem was that of egg movement. In the incubation of whitefish and walleye, the eggs were kept in a constant rotating motion. The lighter dead eggs came to the top and were siphoned off before they became fungused. However, trout eggs may not be moved during their "tender stage" which is roughly the first two weeks after fertilization. To keep the eggs stationary in the jar, the inlet pipe or glass tubing is placed within ½ inch of the bottom of the jar. Then a quart of roofing gravel is poured around the pipe.



THE OPEN system of incubating trout eggs in jars. See details of water supply system. Black jars were a light experiment. Note constant flow siphon on left.

On top of the gravel, an eighth-inch galvanized screen is placed. (See details of water supply system.) The eggs are poured in on top of the gravel immediately after fertilization. With this method the water is dispersed so that each egg has fresh water. The jars, each of an approximate $6\frac{1}{2}$ quart capacity, readily incubate four quarts of eggs, although eggs have been hatched in jars filled to the brim. Two quarts of water per minute running through the jar is sufficient but eggs

DETAILS OF WATER SUPPLY SYSTEM



have been incubated on as little as one quart of water per minute, however, a higher quantity is recommended.

Thirty-two jars are arranged in a battery with 16 on each side. One battery will incubate between 1,000,000 and 2,000,000 eggs depending on their size or 16 gallons of water per minute.

One battery occupies an area 12 feet long, 36 inches wide or about the same space as a double trough. The incubating capacity of the battery, however, is 128 quarts of eggs while the trough accommodates only about 15 quarts of eggs.

There are two methods of arranging the water supply—the open and the closed systems, (see cuts). The closed method offers the advantage of applying the fungicide anywhere along the intake pipe, through one of the stand pipes used to eliminate excess gasses. When the unit is filled with eggs, a more even



THE CLOSED water system of incubating trout eggs.

dispersion of fungicide is obtained by siphoning it into a common intake at the head of the water supply intake. In the open system, each jar must be treated individually. However, the open system is preferred where water is heavily saturated with gasses, since it enables a more rapid escape of these excess gasses.

Different types of filters are used for each of the two systems. The open-system filter is a 55 gallon gravel filled drum. The water enters at the bottom and courses up through gravel. Thus any large foreign



THE ADVANTAGE of closed system is that only the portion of the unit holding eggs need be treated with fungicide.

objects which may clog the battery system are trapped. The filtered water then spills over the open top. The closed system has a sealed barrel, with the water filtered through a sand-gravel combination. This is more effective for filtering silt.

The eggs are treated with a fungicide, in this instance formaldehyde, using a method developed by Jack Reddecliff, staff biologist at Benner Spring. This treatment is simple, cheap and not toxic to eggs or fry.

If the eggs are to be kept at Benner Spring they are allowed to hatch in the jar. After hatching they are siphoned out and poured onto a screened tray. The screen allows the newly hatched fry to go through, but the dead eggs remain on the screen where they are collected easily and thrown away.

If the eggs are to be shipped to any of the Commission's production stations after reaching the eyed stage, they are siphoned out and placed in wire baskets. The egg-filled baskets are then placed in a salt solution of approximately 1 part salt to 9 parts water. As the dead eggs, because of their lesser density will float to the top, they can be dipped off with a net. Brook trout and brown trout eggs respond very well to this treatment.

Rainbow trout, however, are more difficult to separate because many eggs of this species which die do not turn white—the yolk does not precipitate. Their density, therefore, often does not change, hence they remain suspended throughout the mass of live eggs.



APPROXIMATELY 40,000 eyed eggs are in this jar. Very little labor has been involved.

After the eggs hatch, the young fish can be retained in the jars for experimental purposes. Since the environments are identical, these jars make excellent experimental devices. Up to three pounds of fish can be held in each jar. New feeds, chemicals and drugs can be tested in these similar environments.

There are many modifications that can be made to improve the basic principle of egg incubation for individual needs. However, after almost 100 years, research has taken an old idea, modernized it, and found answers to the problems heretofore associated with the labor, space and water needs of trout egg incubation.

In fact, practical test application at all the Pennsylvania Fish Commission's state trout hatcheries have been satisfactory. More units are planned for installation by the next spawning season.

Fly Tying

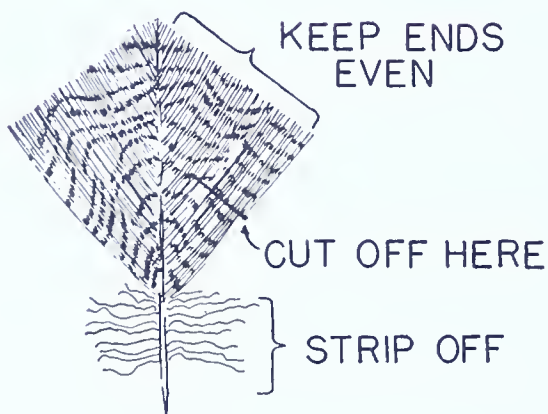
... via simplified methods

Part III of a series

By **GEORGE W. HARVEY**

Associate Professor, College of Physical
Education and Athletics
The Pennsylvania State University

Illustrations by James E. Cartey



BREAST
OR
FLANK

(19)

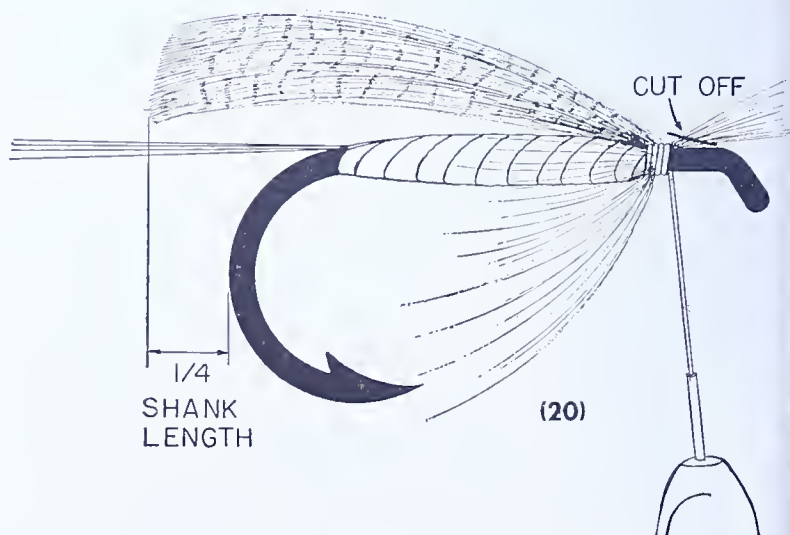


LARGE FLANK
OR
GRAND NASHUA

(19)

Many fly tyers and fishermen contend that wings are useless and do not add to the fishability of a fly. I am sorry that I am unable to defend this thought because wings seem to belong on every fly. Most of the flies we fish with today are tied with wings. Bi-visibles, hackle flies and some palmer flies have no wings. It may be of interest to know that of my many flytying acquaintances (and it numbers in the thousands), the only ones who admitted they saw no use for wings were the ones who could not tie a decent fly with wings. I might add that the true artisan would never think of omitting the wings on a pattern that called for wings.

Not long ago, an elderly man who had been tying flies for many years dropped in to see me about his flytying problem. Yes, you have guessed correctly; his trouble was "wings." Like all fly tyers, he produced a box containing a sample of his handiwork. His flies were exceptionally well tied in every respect, except the wings, which were terrible. When I told him I could remedy all of his troubles in just a few minutes he looked, and I believe he thought, "You don't know me." Nevertheless, in less than an hour he had mastered the few fundamentals and was tying winged



(20)

flies as if he had been tying them all his life. When we finished, he turned to me and said, "It really is simple when you know how."

This is true and any tyer who carefully follows the illustrations and explanations can tie winged flies. Let me caution you to be careful in the selection of the material you use in every fly. Poor material is hard to work with and is very discouraging to the beginner. Diagram No. 19.

The first winged fly that I will describe will be the simplest to tie. The most common feathers for this type of wing are the breast and flank feathers from various species of ducks such as mallard, teal, wood duck, canvas back, etc.

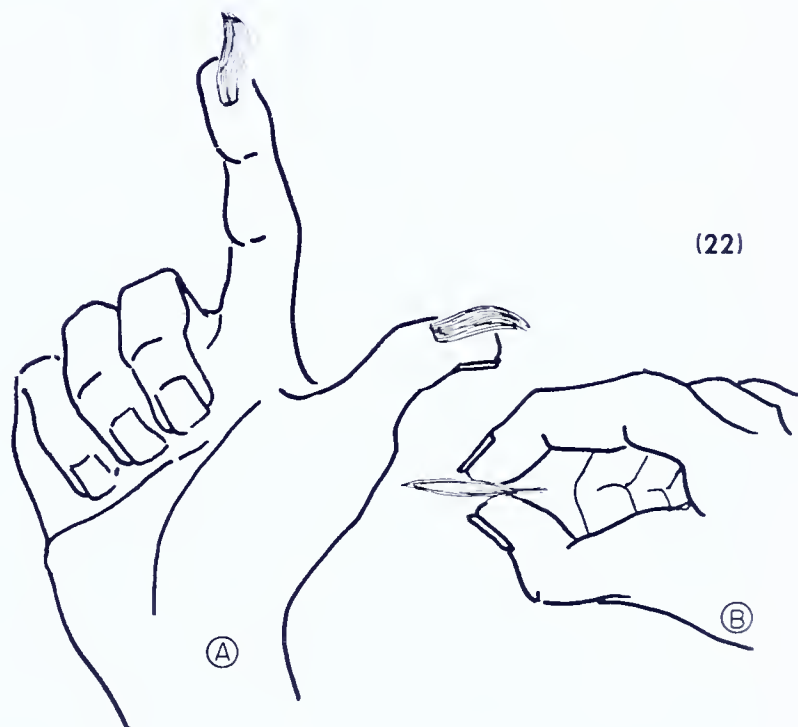
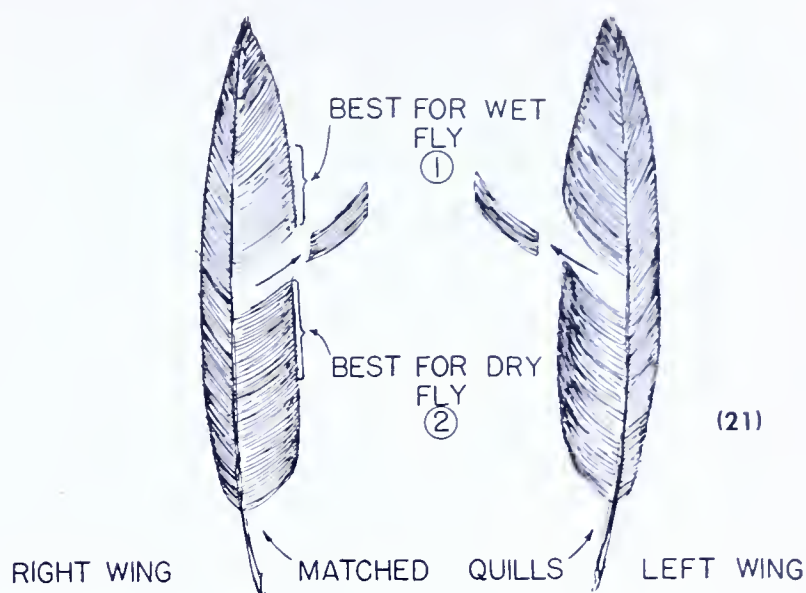
Diagram No. 19 illustrates how to prepare the feathers and where to cut the sections to be used. First of all, tie a common hackle fly. In case there is any question in your mind about this fly, review diagrams 3 to 10 in the January issue of the ANGLER. Let me remind the tyer that the body should be slightly tapered toward the head of the fly. A body that is too heavy at the front end will tend to make the wing stand up too high. Be sure you do not run the hackle up close to the eye of the hook or there will not be room to tie on the wing or wings, and it will be impossible to properly finish off the fly. When the hackle is secured, better throw on one half-hitch so that, if the wing slips or must be removed for another try, the hackle will not come unwound. With the preceding points in mind, you are ready to begin. Now take scissors and cut off the hackle fibers on top of the fly (Diagram 19). This cutting is optional but seems to make a neater fly. Take breast or flank feathers and strip off downy area at the bottom and up from stump end until the fibers are uniform in quality, and as near the same length as is possible, in the area you are going to use. Keep ends of fibers even. Cut out section and roll together so the fibers are all in one bunch.

Diagram No. 20.

Now hold by butt end with thumb and index finger of right hand. Lay along top of hook so you can see how long the wing will extend beyond the hook. Most wet-fly wings should be about one-fourth longer than the hook. Now, trade hands and tie in close up against the hackle using the same procedure as was used to tie on the tail (Diagram No. 4). As soon as the wing is secured with several turns, cut off as diagrammed (Diagram 20). Make enough turns to cover up material and finish off in the usual manner.

Diagram No. 21.

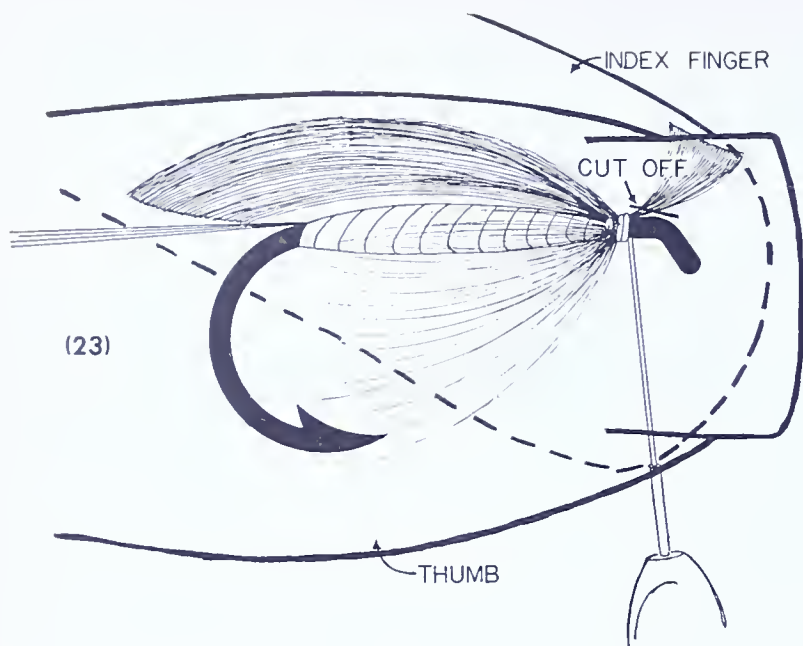
Wing quills are most frequently used for the wings of wet flies. Many species of birds have suitable quills. Duck wing quills are probably more commonly used than any other; at least, they are the best for the beginner to practice on because the fibers hold together



quite well. Study Diagram No. 21. Notice that the center half of the quill is usually the best. Select two matched quills; by this we mean one quill from the left and one from the right wing. They should be as near the same size as is possible. Now cut a section from each quill about three-fourth as wide as the gap of the hook you are tying on. The tendency is for the beginner to get the wings too wide. Now place wings together so the concave surfaces are facing each other.

Diagram No. 22.

This diagram illustrates one method of placing the wings together. I believe it is the easiest and quickest way for anyone to get the two wings together. Moisten the thumb and index finger of the right hand. I use my tongue. Notice the angle at which they adhered to the thumb and finger. This angle is right for me but may not be for you if your finger and thumb differ



cut ends in the right hand and gently strokes the tip ends down with the left. This gives a nice rounded end to the wings.

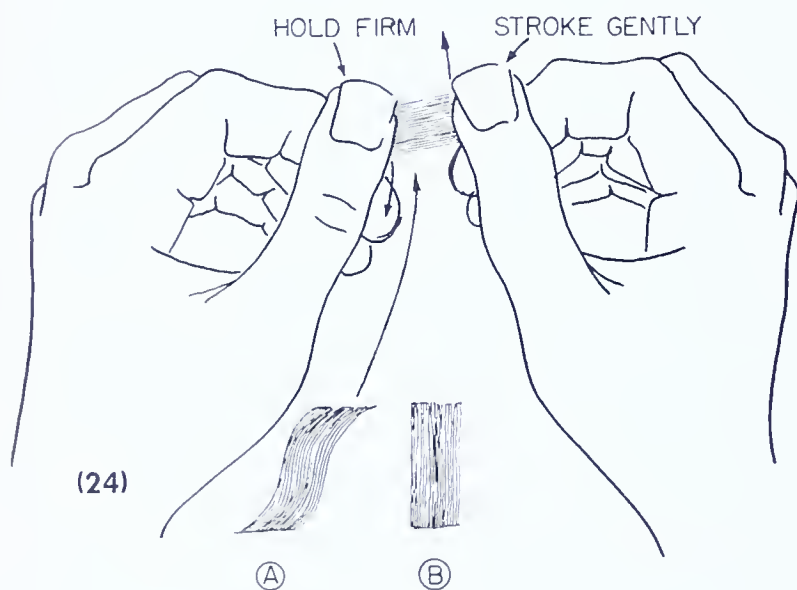
Diagram No. 23.

This is the closed wing wet fly.

Hold the wings between the thumb and finger of the left hand. Check diagram carefully for the correct position. Note that the thumb and finger straddle the shank of the hook and that the wings lie down and are in contact with the top of the body. The tips of the thumb and finger when closed, should extend to (or slightly beyond) the eye of the hook. All other operations are the same as described in diagram No. 4. Hold the wings firmly until they are secured. Once you have made a turn or two around the wing, never make another turn back of the first one. If you do, this will turn, fold, or split the wings. The technique just described is one of the most important in fly tying. Once you have mastered it, you will never have trouble setting any kind of wings.

Diagram No. 24.

This diagram illustrates how one section from either a right or left quill may be formed to make the wings for a wet fly. This technique is seldom used by the average tyer, but is quite simple once it is mastered. This diagram illustrates how a section from the quill of a right wing is formed. Cut section (A) and hold firmly in both hands as illustrated. Now move hands slightly in opposite directions. Next, hold firm by cut end (left hands) and gently stroke tip ends up between thumb and finger of right hand. Reverse the operation by holding the tip with the right hand and stroking in the opposite direction with the left. Repeat this operation until the tip ends are even as in (B). Fold section (B) longitudinally in the middle. Follow procedure under Diagram No. 23.

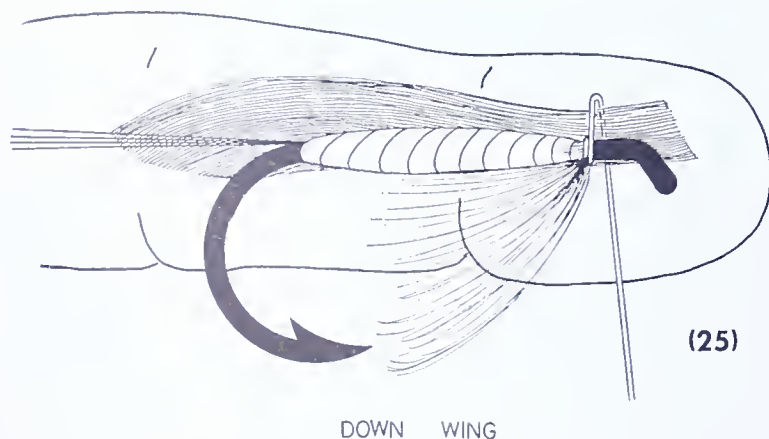


from mine in angle of grasp. Experiment until you find the correct angle. When the thumb and finger are closed, as (B), the tips of the wing section should match and the sides should be even.

If you have placed the wing sections on thumb and finger as diagrammed in (A), the contour of the fibers will be down. The wings may be tied on in this manner or reversed so that the tip ends point up. However, if they are pointed up, one usually holds them by the

The Down Wing

The down wing is quite often troublesome for the beginner. After the body and hackling are finished, cut off hackle fibers along both sides (this is optional). Take wing for right side as in Diagram No. 25 and place on opposite side. Hold in place with index finger of left hand. The lower edge of wing should



DOWN WING

come just to bottom of the body. Take wing for left side and place it opposite, and even with, the one on right. Hold in place with thumb. (Note: For illustrative purposes, the left wing has been omitted. For its position, see Diagram No. 26).

Bring tying silk loosely up between thumb and wing, over top of wing and down between the wing and index finger, then up between thumb and wing. Close

tips of thumb and finger. Hold firmly and tighten by pulling silk up as in Diagram No. 26. After you have had some experience with this wing, you may find that you will be able to tie in this wing as described for the closed wing. I only suggested the preceding method because beginners usually have more success using it. There are many other styles of wings, but if one can tie those described in this article, he or she should have no trouble with the rest.

The recent semi-annual conference of the Fish Commission's biologists and fishery managers at the Benner Spring Research Station, near Bellefonte. During these sessions new advancements in fishery science and management are studied for possible application in Pennsylvania, and the Commission's own research and field efforts and fishery problems are reviewed, discussed and planned.

"Skull Session"



AROUND THE TABLE from left to right are: Daniel G. Reinhold, Fishery Manager, recently transferred from the northcentral region to Benner Springs; J. Curtis Simes, Daniel Heyl and Robert J. Bielo, fishery managers of the south-central, southwest, and southeast regions respectively; Arthur

Bradford, assistant chief aquatic biologist; Gordon L. Trembley, chief aquatic biologist; DeWayne Campbell, Jack Miller and Keen Buss, fishery biologists at the Benner Spring Research Station; William Daugherty, northwest region fishery manager, and Alfred Larsen in charge of research on Lake Erie.

Meet Mr. White

. . . he's an avid friend of the fisherman, puts up a staunch argument . . . makes a good account of himself in any company, and can be the subject of many after dinner speeches.

By RAY OVINGTON

Perhaps it is because of the advent of finer and lighter tackle that such fish, usually regarded somewhat erroneously as "panfish" have been suddenly and affectionately elevated into the class of sport fish. The white perch is a pan-game-sport fish in my book, for he fulfills all requirements when taken on threadline gear.

Like many angling scribes who become excited about their pet fish I could explode into staccato prose about the mighty leaps and the breathtaking runs, the savage twisting and turning, body rolling and super-fish characteristics usually extolled as over written virtues.



Mr. White (Perch)

I could inspire you with comparisons like: They jump like a tarpon, smash a lure like a bass, run like a salmon . . . are the poor man's striped bass and all the rest. But I won't. I prefer to let you make your own calibrations on the scale of experience. I will simply suggest that you investigate Mr. White. Look him up and tangle with him with light tackle.

To go and do, I have included here some hints about him and the ways to take him, where and when you'll find him and more or less what to expect.

It is a lot of fun and you can fill a bucket with these little game fighters and bring home a tasty meal for the entire family.

Many methods are employed. You can still fish, cast or troll depending on the conditions and they'll take minnows, worms, grubs, pork rind strips, spinning lures, bucktail streamers and gaudy colored wet flies. At times the big ones, over a pound in weight will rival a like size trout for sport when played on light tackle.

The White Perch, *morone americana* really belongs in the tidal regions and like the striped bass, salmon and shad, ascends the rivers to spawn. He is also found in great abundance in large deep lakes ascending the tributaries and feeders in his spawning run. His most prolific range is from Chesapeake Bay, where he sometimes spawns in December on up the coast as far as Maine and Nova Scotia. Millions of pounds of these fish are taken by commercial netters for the market and though they are a small fish they bring quite a price at times. The supply is seemingly inexhaustible and there is no closed season on them in most states. There is no size limit though it is really no use in taking them for eating purposes unless they are seven or eight inches long.

One of the most interesting and action packed methods of taking them is with a very light spinning rod, two pound test line and tiny silver spinning lures, either wobbling spoons, the Colorado spinner or blade spinners and flies. Often the addition of a small piece of worm on the hook will bring more strikes.

I can recall many times when we have given up trying for stubborn bass and desiring to return home with fish, have switched to perch rigs. Twilight is one of the best hours for them and if the wind has been north-west or west, during the day, it generally calms down at sunset. The glassy lake will reveal the presence of schools of these fish surfacing in a veritable ball. The school will move along the shore, appearing for a few moments peppering the surface reflections and then for no reason at all will suddenly quit. Watch closely and the school will be seen surfacing in another spot.

All that is needed is to approach with a little caution and then go to work with the lures, casting to the fringe of the mass to draw out the bigger ones rather than cast into the center and run the risk of dispersing them.

There is no guesswork in white perch surface fishing. If they are not seen schooling, there is little point in going after them on top. There are of course certain hot spots in any lake that generally produce, but by and large the species is a schooling rover, constantly on the move. Don't be deceived if it appears that there are only a few present. You will find that there are at least ten times as many fish beneath the surface. The bigger ones will naturally be underneath. A lure that is cast beyond and aside where the fish are breaking and allowed to sink will likely bring a strike from the larger ones.

They hit a slow moving lure quite hard and tussle with it instantly and then with a surge of power shoot off into a run that usually ends on the surface. The rest of the fight diminishes quickly and it is a simple matter to net your perch and cast out immediately for another. What they might lack in sophistication and tricks or just plain power, they make up for in numbers. When you long for a bit of action, perch will afford many exciting moments. Work the tag end of the school following along as they go inshore.

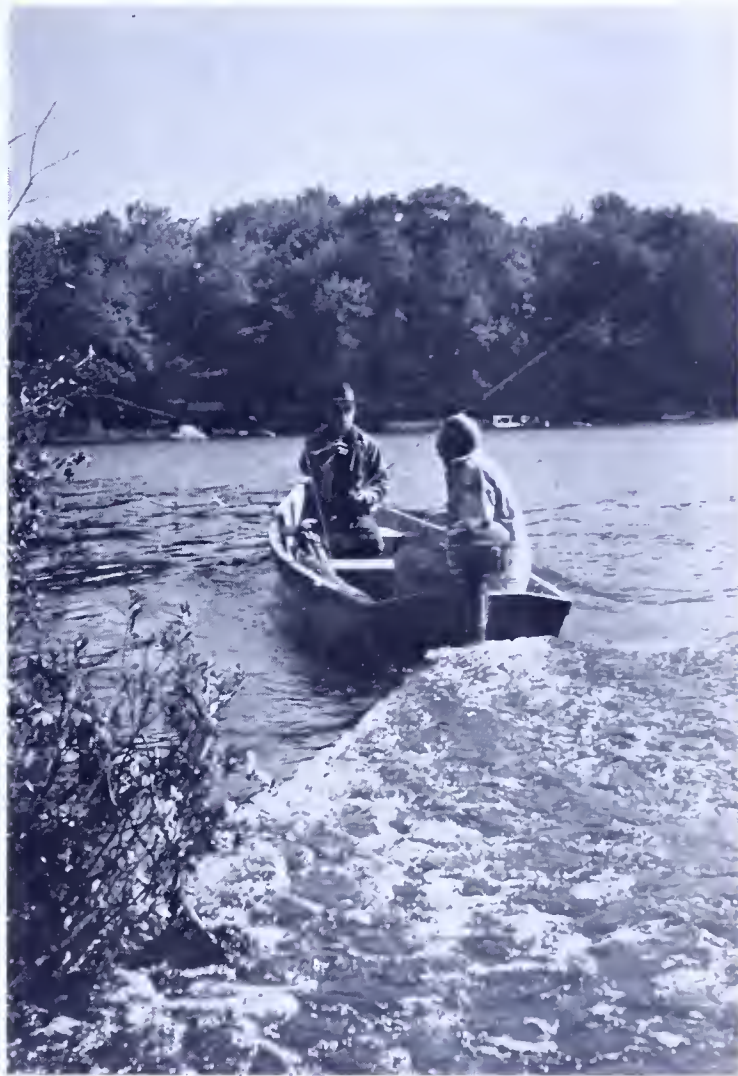
I recall the afternoon Ralph and I switched from the unproductive bass tackle at the sight of a school of perch and spent an hour or so filling a couple of pails with these little fellows. Ralph had come for a week end visit with the hope of tangling with some of our big largemouth bass. As usually happens in such instances, the fishing was suddenly "off" for some reason when only three days previous I had been throwing the big ones back to grow bigger!

Though trolling is a part of the sport I don't take readily, especially for such small fish, the method does seem to bring up the bigger perch in our deeper lakes. I've seen many a boat come into the landing with perch of a pound and up, sometimes two pound fish, but those last are the exceptions. The rig here for trolling is a double bladed Indiana spinner ahead of a single or tandem hook and worm. A Colorado spinner trailing a strand of nylon to hook about four inches in length works well also. For the very deepest parts of the lake, the boys sink the works with a lead in the shape of a rudder or trolling fin and this also keeps the line from twisting. Some exceptionally large white perch have been taken from deep lakes when trolling for landlocked salmon, lake trout and bass. Occasionally a nice one will take a trolled spoon, but bait usually works more consistently. Night crawlers put on whole seem to be the medicine and still fishing the live minnow works just as well, though of course live bait fishing requires more bother and fuss. Its

one advantage is that you never know what will take your line.

Praise be, the perch fishing stands up well all season with live bait heading the list for numbers of fish caught.

While fishing in another part of the world, my wife Helen and I got the surprise of our lives up Nova Scotia way one spring. We arrived at Kcdgemakooche Lake just at the tail end of the best trout fishing. While we were there specifically for trout, we discovered that the lake also contained white perch of magnificent size and taste. Despite the fact that our host, Norm Phinney, assured me that the trout were holding in many small streams and beaver ponds that drain into Kedge, I just couldn't resist spinning over the big water. There were many marvelous looking



WHETHER the bass hit or not, the smart angler in search of fun and fish might well depend on the white perch for both.

spots near the shoreline and for our first three days at the lodge I stubbornly worked these over, secretly believing that I would snag into a lunker trout. Instead of the trout I was rewarded with white perch that measured in over a pound sometimes two pounds. They took everything in the spinning lure department including some home brew weighted bucktails.

On our last day at Kedge, while waiting at the dock for the launch that would take us to the car, I couldn't

resist unpacking the gear and making a few last casts. The little silver fish sailed out in a long arc and I let it sink quite deep. Just as I began the retrieve there was a good hard hit. I felt sure that this was going to be my big trout and handled the fish as tenderly as I knew how. Norm and the boys came on the dock to watch the proceedings. The fish surfaced and it was a perch but a WHOPPER. We judged it to weigh a bit over three pounds and I presented it to Norm as a final thanks for a wonderful fishing vacation.

If you are fishing for perch when there is no school in evidence and you lack the knowledge of the contours and deep spots of the lake, it is best to drift with the bait, weighted with a couple of split shot and slowly row along the shore at least fifty or more feet out. Once you get a strike from a fish, stop the boat then and there, anchor if possible and stay around. You are liable to hit into yellow perch, crappie, bluegills and of course bass or trout. Deep spots are inhabited by any fish that are found in the lake. More than likely there is a spring hole there and in the summer and fall months when the upper lake water is warm you'll be able to return to the spot, secure in your knowledge that you are not fishing blind.

Whites are also fun to take in streams, for here

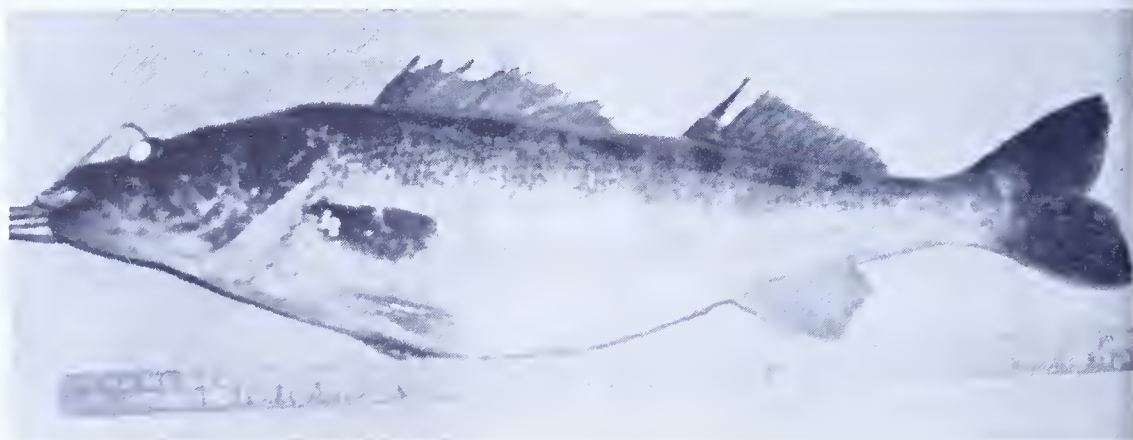
they are generally as large or larger than those found in lakes and always more powerful. They will fight harder and strike more avidly to lures especially small silver bodied bucktails. When found in company with smallmouths, the large white perch rival the old bronze-back for action and most certainly for taste.

Bubble spinning, that is bait fishing drift style with the aid of the plastic bubble, is a killing combination for them and if you fish with live bait near the heads of pools, you'll certainly connect. In springtime when these fish are on the move to the spawning beds, you will find them most avid strikers and very good to eat. When the waters have warmed up and the trout have left for the little unfishable creeks and tributaries the white perch will fill the gap.

If you have a family I know of hardly any other fish that will afford so much fun for them. They can learn the rudiments of casting and the use of various methods of fishing. There is nothing quite so reassuring to teacher as well as pupil as fish in the creel. It makes the advice ring true and offers the proof of prowess.

White perch is the synonym for fishing fun and full basket of them seems to make the whole safari worth its while. Don't forget Mr. White when Mr. Bronze-back is not at home. Mr. White talks to strangers!

A "Keeper" Walleye



... that's what this one was—all 29½" and 11¾ lbs. of it—to Charles Snyder of Tunkhannock, Pa. It was caught last November on a minnow on the business end of a spinning rig, from Lake Carey in Wyoming county.

District Warden Stephen Shabbick photographed the fish and observed in his report that while most sportsmen take up the gun come November, or have called it "quits" for the year, Mr. Snyder stays with his fishing. "He could take his limit of six every Sunday if he didn't return most of his catch to the lake to match wits with them another day," said Steve.

And posed was a question as to why so many fishermen will brave whatever the weather man doles out,

and elbow to elbow competition in early spring for a crack at trout then give little thought to fishing like this under more favorable conditions at the other end of the season.

Nor does Lake Carey only provide good walleye fishing. Ben Pherreigo, also of Tunkhannock, separated an 8¾ lb. largemouth from there in November.

Nor were reports like this limited to Lake Carey in Warden Shabbick's district. All through the fall, nice catches of smallmouth and walleyes were given up by the North Branch of the Susquehanna, including a 31" walleye taken by an angler from Vosburg, who preferred that his name not be mentioned.

Governor Designates March 15-21, 1959 National Wildlife Week In Pennsylvania



FOLLOWING THE PROCLAMATION ceremonies in the Governor's Office, Governor Lawrence was presented with a ten year collection of wildlife stamps, a gift of the National Wildlife Federation and the Pennsylvania Federation of Sportsmen's Clubs. It was mounted in a beautiful brown leather portfolio and engraved in gold lettering.

In the photo (l. to r.) Dr. Maurice K. Goddard, Secretary of Forests and Waters; Governor Lawrence; Seth L. Myers, Chairman of National Wildlife Week in Pennsylvania; M. J. Golden, executive director, Pennsylvania Game Commission and H. R. Stackhouse, administrative secretary, Pennsylvania Fish Commission.

"The National Wildlife Federation annually sponsors the observance of National Wildlife Week, an observance begun in 1938 by proclamation of President Franklin D. Roosevelt.

This event is observed today throughout the Nation, bearing witness to the importance of the conservation of our wild animals and the environment in which they live. Wild animals and birds are a vitally important part of our natural resources, and must be conserved and protected as we protect our forests and streams.

I am happy to designate the week of March 15 to 21, 1959, as Wildlife Week for Pennsylvania, and I urge my fellow citizens to take an active part in the conservation of our natural resources throughout the coming year."

Signed: David L. Lawrence
Governor

Teachers To Study Conservation!

The 14th anual Conservation Education Laboratory for Teachers, to be conducted at the Pensylvania State University during the coming summer, will offer a rich and enjoyable outdoor education experience for elementary teachers, secondary teachers, and school administrators. Students will study about soil, water, forest, fisheries, wildlife, and mineral conservation. Stimulating field trips, lectures, demonstrations, and group discussions are planned to provide pertinent and practical information about natural resource management.

The course is designed to develop leadership for school and community programs in the conservation of natural resources. Teachers will receive many instructional aids, and will learn a variety of skills and techniques related to conservation education.

The Laboratory work may be taken for graduate or undergraduate credit, and to meet certification requirements. Students are housed in Grange Memorial Hall

on the Penn State campus, and a bus is provided for field trips. Teachers may attend either of two sessions: June 29 to July 18, 1959 or July 20 to August 8, 1959.

A limited number of scholarships are available, and are awarded on the basis of a letter of recommendation from a school official. Numerous private, public, and governmental groups generously contribute scholarship funds, and help to support the Laboratory by opening their facilities and providing expert instructional service. All conservation minded organizations are invited to assist the Laboratory by making scholarships available and by encouraging deserving teachers to enroll in the course.

Additional information, bulletins, and applications may be obtained by writing to The Conservation Education Laboratory for Teachers, The Pennsylvania State University, 311 Burrowes Building, University Park, Pennsylvania.

ANGLER QUIZ

By Carsten Ahrens

Terms used about a Fish Hatchery

- | | |
|------------------------------------|--|
| —— A. Stripping | 1. A very young fish. |
| —— B. Yolk Sac | 2. Natural food for the very young fish. |
| —— C. Fry | 3. Male seminal fluid. |
| —— D. Milt | 4. Young fish from first oral feeding stage to one year of age. A no. 3 fingerling is about 3 inches long. |
| —— E. Finely ground liver or heart | 5. The breeding and raising of fish. |
| —— F. Roe | 6. The young of some water insects, e.g., Stoneflies. |
| —— G. Fingerlings | 7. Manually removing eggs and sperms from adult fish. |
| —— H. Nymphs | 8. Fish eggs. |
| —— I. Fish Culture | 9. Marking fish by fastening tags to head or body, to study migration, etc. |
| —— J. Tagging | 10. The first food given newly hatched trout. |

Answers on Page 15

Aquariums And Maps To Feature Fish Commission Participation In Education Demonstration At 1959 Harrisburg Sportsmen's Show

A new approach to outdoor education will have free reign in a 1/3 acre sylvan scene brought indoors at the Recreation & Sportsmen's Show, scheduled for March 16 thru 21 in the Farm Show Building in Harrisburg.

The planned combination of exhibits and school teacher-student-spectator participation in simulated outdoors activities, under the direction of state agencies personnel, represents a new conservation teaching technique. It will be a demonstration of a unique experiment in education fostered by Show Director John Altland, in which 12 separate public and private agencies are cooperating.

Though the new concept was introduced in the 1958 edition of the show, the forthcoming program will be an elaboration of the earlier effort and may well set the pattern for similar applications elsewhere.

A continuity of activities, events and experiences will be conducted in the "indoor forest" throughout the six-day show. Tree planting, stream management, forest and wildlife management, predator calling, trapping, weather station operations, shelter construction, safe gun handling and shooting, casting, camp fires and outdoor cookery will be among the activities.

Fish species identification and habits will be presented in the best possible manner through an aquarium display just completed by the Fish Commission, to be set up for the first time for the occasion.

Another innovation will be the availability at the show of the highways-waters maps of several of the state's counties, publication of which was announced recently.

The agencies participating in the exhibit in addition

to the Fish Commission are the Pennsylvania Game Commission; Departments of Forests & Waters, Public Instruction, and Agriculture; Pennsylvania State University; Soil Conservation Service; "Pennsylvania Farmer" magazine; State Grange; Pennsylvania Outdoor Writers; Izaak Walton League, and the Sportsmen's Service Bureau.

The entire project is being coordinated by Ott Wuenchel, formerly with the Department of Public Instruction, now with Sportsmen's Service Bureau.

In addition, at the Pennsylvania Recreation and Sportsmen's Show, visitors will see the largest boat show ever held in the state of Pennsylvania. This is a great show in itself.

In touring the show, visitors will see the latest and newest in hunting, fishing and outdoor living equipment, sports cars (both foreign and domestic). A gigantic style show of sports wear with gorgeous models. Archery demonstrations and competition, working dogs in action in field and woodland settings.

And for the fishermen from 6 to 80, fishing for live trout is available all during the show.

The small Arena will house one of the finest stage and tank acts ever seen at any sports show. This part of the show is double the size of last year.

Mr. John Altland said that if the show continues to get this enthusiastic support, it means moving the show into the large Arena next year.

The Pennsylvania Recreation and Sportsmen's Show is the only sport show in America to be written up by leading consumer magazines for its educational features and its dramatic demonstrations of outdoor living.

Answers to ANGLER QUIZ

7	A	8	F
2	B	4	G
1	C	6	H
3	D	5	I
10	E	9	J

NOTHING NEW

By **BILL WALSH**

*Photos by Johnny Nicklas
and Alfred Larson*



ICE fishermen on Lake Erie's Presque Isle Bay.

Whoever said, "There's nothing new under the sun," was not talking about fishing.

Through the years, one revolutionary change after another has been recorded in that hallowed sport and, more recently, the science attending it.

To cover either topic would require writing a book and right now I can't spare the time for that. But enough time will be taken from a bit of fishing I've promised myself, to write about some of the changes that have taken place in fishing, both sport and commercial, along Pennsylvania's 40-mile Lake Erie boundary and in Presque Isle Bay.

Some of these changes have been gradual. They've been so gradual that one is only aware that they've taken place when a totally new circumstance exists—like waking up to the fact that one's hair has turned gray.

Other transitions in nature are more explosive. They seem to happen almost overnight—like the radical changes in the famed ice fishing on Lake Erie's Presque Isle Bay.

Until three years ago, the principal catch by the ice fishermen was yellow perch. When the ice lasted into February a few crappies and other pan fish were thrown in. Then in the winter of 1956-57 smelt began to appear. While they were few in number, they were big—up to 14" long. This slim, silvery winter-time newcomer found the perch fishermen's minnows much to their liking.

And about this same time, another change, this one on top of the ice, had just about completed itself—the shift from minnows as the most popular perch through the ice bait, to the "mousee" grub. The mousee grub for those interested is nothing more than the larva of a fly similar to the horse-fly.

For years, lake minnows reigned as the favored bait to all except a few hardy inventive fishermen who preceded their ice fishing trips for perch with forays into last year's goldenrod fields.

There, in the hardened blisters on occasional goldenrod stems they found tiny golden grub. Using these on small sharp hooks, they claimed to have out-fished

their minnow-using brethren of the ice fishing fraternity. Then a few of the bait stands took to stocking a larger, easier-to-handle and greater-in-supply grub—the mousee. And the goldenrod hunters switched to these, still outfishing their companions. Many of the former minnow users switched with them. It's generally conceded now that the grubs will produce more fish through the ice than will minnows—as long as it's perch you are after.

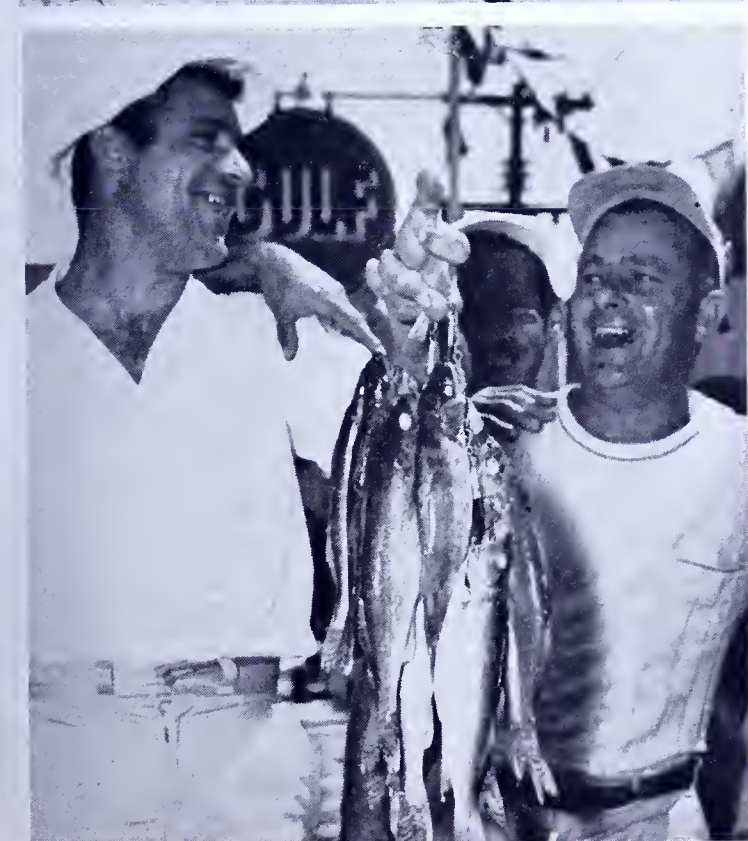
But those who stuck to minnows were the ones who caught the smelt. Perhaps more would have been taken if fewer fishermen had been totally converted to the mousee. It was observed that the smelt didn't readily take the grub.

Notwithstanding, in the winter of 1958-59 the smelt catch was phenomenal. Some individual catches could not be carried. Some fishermen came off the ice after a day's fishing dragging buckets or tubs or boxes packed with as many as 500 of them. And those who use both minnows and grub brought back plenty of perch, too. In fact, the winter's catch through the ice on Presque Isle Bay may well be measured in tons and not mere pounds. If any circumstance qualifies for the label "change," that is it.

In fact, it's a virtual revolution—catching tons of a species of fish just one of which was a rarity from the same waters only four winters ago. As changes in nature go, this one was almost overnight and truly explosive.

A LAKE ERIE party boat—until the last year or two mainly for blue pike, now perch, walleye and smallmouth.





It's interesting to note that originally the smelt was a marine species of fish. It became landlocked unknown years ago in a few lakes on the middle eastern seaboard of the North American continent. Back in 1912 a quantity of fertile smelt eggs were shipped from a hatchery in Maine to Michigan. There they were hatched and planted in Crystal Lake in Benzie County. From Crystal Lake they found egress to the Great Lakes throughout which they have spread and multiplied with amazing rapidity.

In 1940 they reached a peak of abundance but virtually disappeared as a result of one of the sudden kills with which nature conducts remedial population shifts, when one species gets out of hand. At the present time they are again abundant and their total effect on the economy as well as the ecology of the lake is not yet fully understood.

Nevertheless, there they are now in Presque Isle Bay, bringing wide grins to the faces of the ice fishermen, as well as late-season fishermen (they began to appear in the catch in late October, 1958) from shore and boat.

While the smelt were coming into their own, that fish of sandwich fame—the blue pike—has fallen into a decline and currently stands at one of its lowest known population ebbs. The Lake Erie party boat fleet which only a few years ago accounted for hundreds of thousands of blue pike in a season have been practically idled—except when they fish in the daytime for perch, bass or walleye. The commercial fishery has also suffered heavily.

Perhaps next year the blue pike will be in again. It may take longer, or maybe another species will find favor and flourish in a new set of conditions. No one can be certain which might take place, for surprisingly little is known of the ecology of Lake Erie.

In any event, statistics gleaned from Lake Erie commercial fishery records show the blue pike to be a species subject to “ups and downs”—as grouse, among game birds, experience cyclic fluctuations.

In 1957, for example, the last year for which figures are available, an estimated catch of 11 million pounds of blue pike was reported. Compare this with the 21 million pound catch in 1956 and a reduction of almost 50% will be noted. 1958's total will doubtlessly be much smaller.

However, in other blue pike population ebbs, things were worse. In 1951, only slightly more than 6 million pounds were taken. In 1946 about 5 million pounds comprised the total catch.

A disturbing element in the 1957 poundage is the

(top left) A CATCH of perch from Lake Erie. (middle) Smelt from Lake Erie. (bottom) A string of Lake Erie blue pike. Studies now underway may disclose the cause of population fluctuations and show the way to managing its fishery, sport and commercial.

COMMERCIAL FISHERMEN at work on Lake Erie. Catch include smallmouth bass, yellow perch, blue pike, walleye, sheepshead, suckers, carp, smelt, white bass, sturgeon and others.



fact that the individual fish comprising the catch were all large—mostly of the 1949 class, the last year when a truly successful spawning was recognized. So, while 1957's 11-million pounds figure is higher than some other years, it is said to have represented fewer individual fish.

It's interesting to note that in 1949—the year of successful spawning which has largely supported the commercial fishery since—the 23 million pound commercial catch of blue pike that year was among the highest since 1915. This would support the contentions of most aquatic biologists that the commercial take, whether at spawning time or later, apparently has little effect on spawning success and subsequent population.

In this regard, Alfred Larsen, fishery biologist at the Pennsylvania Fish Commission's Erie station has said: "When environmental conditions are right for successful spawning and hatching, blue pike populations will spring up again."

Larsen points out that probably of greater importance to successful spawning and hatching, than is commercial fishing, are the effects of the more complex and less understood conditions of environment, interrelationships of fish species, and survival of the young.

There is general accord that more research is needed before these conditions will be better understood. Toward that end, the Pennsylvania Fish Commission, the U. S. Fish and Wildlife Service and the Great Lakes Fishery Commission are all at work. It is hoped that the total of this research will one day point the way to the methods by which so large and complex a body of water as Lake Erie can be managed by man.

For the present however we must accept that beneath her surface, seemingly the same as always, great changes are taking place from year to year; that she is not the same as in 1950; that in 1980 she very likely will be equally different from today, and that, as she proves daily, there is something new under the sun—beneath her imperturbable surface.

Muskrats Gang-up On Fisherman!

James Doherty of Oconomowoc, Wis. thought he had a private fishing shanty on Upper Nashatah Lake but muskrats ran him out of it. As he unlocked his shanty, he found two muskrats that had come up through the hole in the ice. The animals had chewed up most of his fishing equipment. He managed to chase

the muskrats back into the water and started to fish. A muskrat head appeared in the hole and Doherty tried to poke it down with his chisel. The animal came up and chased him out of the shanty. Looking back he saw two muskrats standing guard in the doorway. Doherty has moved his shanty and hopes he can fish in peace.

—*Wisconsin Conservation*

Do Kids' Fishing Contests Promote Sportmanship?

The results of fishing derbies for kids aren't paying off says this author, and he offers a better program

By DR. HAROLD K. HAGEN

Colorado State University

Recently I was discussing the ever increasing problem of juvenile delinquency with a group of friends. As all of us were connected in one way or another with sport fishing it was natural that we should bring in our arguments of why there was less delinquency among boys and girls who had the opportunity to go fishing. One of the first examples cited, of things we as adults had done to help, was the widespread promotion of kids' fishing contests. All of us were in agreement at the time that this, and other similar programs aimed at getting the kids out with a fishing pole, was one real way that we were contributing to the reduction of the delinquency problem.

It was some time later I really took the time to think over our ideas. The more I thought the more I became convinced that we, and probably hundreds of other well-meaning sportsmen, were actually contributing to another problem that in itself could be a cause of delinquency. Instead of promoting the good sportsmanship and conservation we wanted, we were at times promoting greed, selfishness and the worst possible kind of sportsmanship.

We work hard at our contests and on the surface they are highly successful. Perhaps they are too successful. There is no great problem in getting businessmen or organizations to contribute prizes. It is always good advertising to help the kids. There is similarly no problem in getting adults to come out for judging. Public-minded persons are always willing to promote the youth of their community and what better way to show interest in children than to hand out the prizes. As far as getting the kids out that is never a problem. Kids are just as American as their parents. They love contests and turn out for them by the score.

Here then is a situation ripe for teaching a lesson in sportsmanship and conservation, but what do we

do with it? Nine times out of ten we manage to foul it up completely.

Most of us seem more concerned with the awarding



TOO FREQUENTLY it is the larger child who plunks himself in the most likely place, crowding the smaller and less aggressive angler to the side, that wins.

of the prizes than any other part of the program. Children are encouraged to fish for meat because it is the meat fisherman who wins. Whether the child catches the largest fish or the most fish is important. His pounds of fish on the judges' scales are what pay off. Children are naturally very impressionistic and their first associations with fishing are no different than

associations with other things. They are rewarded and praised now for taking the most so why shouldn't they take all of the fish they can every time they go fishing?

Praise is heaped upon the boy or girl who succeeds in beating the others. Skill is mentioned but not taught. Too frequently it is the larger child who plunks himself in the most likely place, crowding the smaller and less aggressive angler to the side, that wins. The aggressive child has his picture taken and he is headlined as the most skillful fisherman of the day. Since most of the ponds are stocked just prior to the contest with commercial hatchery fish there is really little skill involved yet we plant the impression that his is skill, not luck or fruit of aggression.

What then does a child gain from our contest other than a few prizes? He gains the idea fishing is always a contest and to win you should catch the largest and the most. He gains the idea that the public will chide him when he reports empty handed, for only positive results are rewarded in fishing. I have seen children



HE GAINS the idea fishing is always a contest and to win you should catch the largest and the most.

nearly in tears at the end of a day's fishing, not because they didn't catch large fish but because they didn't catch any and that is a sign of weakness. The child may gain the idea that any kind of trickery will pass if he can catch more fish. If a child is smart enough to figure three hooks on his line are better odds than his friend's one, he is generally allowed to show his initiative. Many clubs do have rules corresponding to adult laws but I have actually seen game wardens wink at obvious infractions made by these future sportsmen.

Most organizations sponsoring these contests actually think they are doing the kids a big favor. They feel they are honestly promoting conservation as well as good sportsmanship. Too few of the members realize they can't impress or teach conservation in one big blow-out per year.

Why can't we use our fishing ponds as contact

points between the experienced adult and the kids throughout the entire fishing season instead of just one day? Wouldn't it be better to give the boys and girls some good pointers on fishing during regular classes than to give them a false impression of fishing ethics during a contest?

If I were to organize a fishing education project during a summer, I would make sure the youngsters were taught a sense of values, both real and artificial. I believe I would start by finding out just what the talents the members of my club had, and when they could be available for duty at the children's pond during the summer. When the fish were to be stocked prior to the opening of the season I would like to have all of the kids planning to use the pond present to see the operation. I would invite the local warden and fisheries biologist and a representative from the hatchery to explain costs of raising fish in a hatchery and the need for their introduction in ponds where natural reproduction is impossible and where fishing pressure is intense. I would hope that they would tell the youngsters about values in natural reproduction of fish and what the protection of watersheds means to the places where their fathers and brothers are fishing.

During the summer I would try to schedule my selected educators at a time most advantageous to their specialty. If a man in my club was especially interested in birds I would like to have him available in the spring or fall when the birds were noticeably more conspicuous about the pond. Perhaps this might seem a little far away from fishing but my educator could stimulate interest in the birds they saw and in their habits. I'll bet that before long he could swing the conversation around to birds that feed on fish and give them some valuable observations on predators in nature. Perhaps we would have a little less needless slaughter of fish-eating birds if the kids had an understanding of when and where they could be of value and when and where predatory birds are really harmful.

If a geologist or a soil conservationist were present in my club he could talk about soils that surround the pond at the same time he was showing a boy how to make a dry-fly float on the water. He could explain how certain types of soils yield more minerals to the water than others and how these minerals increase plant production and how plant production increases the food of fishes, just like the insect he was trying to imitate with the dry fly.

I'll bet sportsmen in my club who had no special field of outdoor knowledge would be eager to bone-up on some phase of natural history that they could present to the kids. All of them could help with the identification of the fish the children caught and show them the characteristics we use in fish taxonomy.

Others could show the boys and girls how to clean fish and keep them in the best condition on a hot day. At the same time they could show how a fish's insides compare with that of other animals and how certain fish are adapted to eat certain kinds of food. They could tell how the fish will see and how they hear. They might tell how the scales of a fish can be used to tell its age and how important this is in telling when to plant fish and why regulations and limits are often based on this kind of information.

The farmer could tell the young people how valuable water is to his crops and how good farming practices keep the water good for fish production as well as crop production. It would provide him with an excellent chance to bargain for respect for his property in return for his providing good fishing.

If I had one man especially good at showing relationships between animals and their environment, I would hope that he would be available frequently to help tie all of these stories together. The kids could learn about ecology from him. I would also hope that he could teach them an appreciation of natural beauties and why a man who comes home empty-handed can be just as successful as the man who comes home with all that the law allows him to take. He could show them how to use their natural resources wisely and how to achieve satisfaction from the feelings gained when a person has an understanding of the relationships and balances in nature.

Perhaps at the end of a summer the children could see for themselves why it is important to respect property rights. They might understand why they shouldn't leave trash along streams or contribute to pollution in



IF A CHILD is smart enough to figure three hooks on his line are better odds than his friend's one, he is generally allowed to show his initiative.

other ways. If children are given the chance to understand the beauties of nature and to appreciate the delicate balance she holds, we have no reason to fear they will be among the few bad sportsmen that ruin things for the majority.

This is probably all too idealistic. Maybe most sportsmen do not see it this way or will not have time during a busy summer to sponsor a program of this type. One big affair with much advertising and propaganda is an easier way to show the good works of the club. Yes, it might be easier but will it have the desired results?

Let us examine our fishing contest thoroughly. Are we getting the results we want? Do kids' fishing contests really promote sportsmanship?

—Colorado Outdoors

The Fish's Eye-View

OUTDOORS INC.

Ever stop to consider how a fish looks at things—what he sees, how he sees it, and when? If you will, your feelings won't be hurt when you drag a proven lure across the nose of a lunker without making him do more than blink.

We offer the following information on the subject—facts that could improve your fishing.

Fish see outside their environs through a round "window" immediately overhead. The width of this aperture is limited by the inability of light to penetrate water at certain angles.

The same thing occurs above the surface. We can watch fish directly under us, but not when they lie some distance away. Beyond that, the surface acts as a mirror.

To further confound the fish's view, objects on land or in the air are strangely bent into a circular panorama. This phenomenon, coupled with the magnifying quality of water, present a peculiar picture. Ruffle the surface a little, and the fish sees man as a wobbling, dancing creature of fantastic proportions—a fearsome monster which commands more attention than the most alluring plug or bait.

When fishing from a boat anchor some distance from a likely looking spot. Ask about local currents that determine the direction fish lie. Approach from behind and with caution.

The next time your old favorites seem to be getting the bum's rush, consider the situation from the fish's angle. Maybe you're more interesting than your lures.



EROSION STARTS as the stream gains a toe hold in an earth bank.

Plants Erase Erosion

By **DON SHINER**

Over a span of several years, my favorite pool in the upper reaches of the Huntington Creek disappeared. The mere sight of the stream in that region brought a nostalgic feeling for that particular pool gave up many beautiful browns. Actually the stream had not changed course. Tall feathery hemlocks continued to droop low over the water. But now the water had grown shallow. Heavy mud deposits some places more than a foot deep, gauging by the depth in which my boots sank, covered the bottom. I wished so many

THE STREAM chews relentlessly until huge slices of bank disappear into the water.

times that a turbulent current would rip the mud from the bottom and return the pool once again to its original character.

The same current, however, which I wished to clean the pool had caused the silt deposit in the first place. Farther upstream the creek chewed angrily at raw earth banks. Truck loads of rich top soil and clay were carved from the banks, carried downstream and deposited on the bottom of this and other quiet pools. A silt filled pool will sometimes become cleansed by gushing currents during the high water of spring. But it is only temporarily, for soon the pool becomes choked again so long as the raw banks, denude of vegetation, remain.

This particular stream, located in the general north-eastern part of Pennsylvania, is not the only water route plagued with erosion. Others, particularly those which carve a winding route through open farmland are choked with much valuable top soil and heavy clay deposits. Most of these deposits have been eroded from the banks. Fortunately those streams flowing through heavy wooded regions have escaped this siltation simply because the vegetation holds the banks firmly in place even in the face of savage currents.

Mud and silt have telling effects on fishing. Trout roe and that of warm water species that are deposited on the bottom stones are covered with silt. Much of



this is destroyed. No longer are there quantities of nymphs and aquatic life found among the formerly exposed gravel and stones. These too have been choked out by the silt beds. With the food chain seriously affected, fish life is reduced in proportion. Fishing in such mud choked streams begins reaching a point of diminishing returns.

The problem has many facets. Heavy handed work with the broad ax and the modern power saw used in cutting over watersheds plays a role in erosion. Mechanized cultivation which facilitates farming fields bordering and running to the very edges of small stream banks also permits streams to have access to top soil.

Corrective measures for these are already in operation. Aware of the acute losses of soil, farmers are using contour farming methods. This practice is gaining favor rapidly most everywhere. Badly cut over watersheds are being reforested with quick growing pine trees. Give the streams time and with these measures in effect, they will rid themselves of silt and return to the original bed of rock and gravel. But one problem still confronting the streams is eroded stream banks. These continue to obscure the picture. And here is where the average angler—like you and I—can help in this phase of stream conservation.

Raw banks are eager to support vegetation. With a little assistance from fishermen, the banks can quickly be tied in place. A handful of grass seeds and tree cuttings tucked in the anglers' creels are all the materials necessary to combat bank erosion.

Scott Johnson and I recently studied several eroded banks on one fine trout stream. The water had eaten a toe hold into the bank at various points and chewed relentlessly until slices of entire shoreline, tall as a two story house, fell into the water. Farther up stream



FINALLY, with banks tied in place, the stream returns to its original character. Contrast this to the photo showing eroded banks. Which stream do you prefer to fish and which one, in your mind, would yield the most fun astream?



HERE IS a corrective measure. Cut small willow limbs and stick these into the raw earth banks.



THE WILLOW branches or shoots will quickly grow roots in the moist soil.

we noticed willows were growing abundantly along parts of the banks. We decided to try patching up the bank wounds. Cutting half a hundred or so willow shoots during the spring months, we stuck these into the raw earth banks. A week later we returned and sprinkled handfuls of grass seeds and miscellaneous seeds sold for wild bird feed.

Within a month the raw brown banks took on a greenish cast. Grasses began to grow. Willow shoots took root. Rains came but dripped over the green sod rather than eroding the clay. By autumn the banks were completely covered with thick sod and foliage. The willow shoots were now seedlings with well established root systems. Mud bars and silt in the stream below the banks gradually disappeared. Indeed we were well pleased at the progress the stream had made in returning to its former self. Here, we thought, was a project that other fishermen could undertake to improve streams in their locality. To watch a raw earth bank become transformed into a growing terrace is most satisfying work in itself. However, fish and aqua-



A HANDFUL of miscellaneous grass seeds will cover a great area of raw earth bank. Carry a handful in your creel; plant the stream bank where it is needed.

tic life is helped tremendously. Fishing is helped considerably.

Of course this re-planting of banks should not be undertaken without the consent of the landowner. The land belongs to him and it is only human to resent

someone interfering regardless of the intentions. But not one landowner in a hundred would object to this simple planting of stream banks once the problem is discussed with them in detail. Quite the contrary. Many of them will lend a hand. Perhaps the disadvantages of silt eroding into the stream never occurred to the landowner aside from the fact that he knows he is losing valuable land and top soil along the banks each year. If farm work is not pressing, he may even help reforesting the raw stream banks. Certainly the fisherman who takes a few minutes during the growing season in the spring to stick willow shoots into the banks, or sprinkle handfuls of seeds at such places is a welcomed guest.

Make a survey of your favorite stream. How does it measure up? If there are eroded earth banks, plant a few shrubs, grasses and willow shoots. It is a wonderful stream improvement project. The mud bars and silt deposits will then gradually disappear from the pools. Fishing will pick up. In a short time there will be a few more fish for the creel. Indeed stream bank planting pays many handsome dividends.

Phooey To "Fishermen's Luck"

By JOHN TAYLOR, JR.

It is said that 10% of the fishermen catch 90% of the fish. This is most likely because the anglers in that 10% know more than a few tricks of the trade—or should be say "sport"?

IF you know that when the barometer is high (above 29.90), with other conditions normal, the best fishing will be on or very close to the surface;

IF you know that when the barometer is low (below 29.90), the fish will be at or near the bottom;

IF you know that when the barometer is changing—raising or falling—rapidly, the fish will not likely be feeding;

IF you know that fish are often chosey and that there is no perfect lure;

IF you know that varying the pace of retrieving a lure often gets results when a steady retrieve won't;

IF you know some of the old stand-by time tested lures for each species of fish;

IF you know that in a steady breeze fishing will be best on the lee shores during the first two hours of daylight;

IF you know that after the two initial daylight hours fishing will be best on the windward shores;

IF you know the temperature ranges most favorable to each species of fish;

IF you know the contour of the lake bottom, the bars, the drop-offs, the deep holes, etc.;

IF you know or endeavor to learn more of each species of fish, its habits, characteristics, and food preferences . . .

THEN, you too can be of that respected, magical and highly successful 10% and say, "Phooey to Fishermen's Luck."



CONSERVATION ACROSS THE NATION

Prolific Crappie

An estimated 50 adult crappies, white and black combined, remained in 184-acre Ardmore City Lake, Oklahoma, after a partial population removal in September 1953.

Detailed studies conducted by fishery workers in the following year disclosed that the re-production of those 50 crappies reached an estimated 200,500 offspring averaging 5.3 inches in length. Details of the studies were presented and published in a recent Proceedings of the Oklahoma Academy of Science and observe that the reproductive capacity of the two species were clearly indicated and emphasized that stocking crappies in lakes where they are already present is of little value.

Salmon Come Back In Maine

About 350 Atlantic salmon were caught by anglers in Maine during 1958—a record high harvest since their near extinction from U. S. waters some years ago. Of the total 101 were reported from the Machias River. In addition 356 moved up that stream past the last obstruction into a 50 mile spawning and nursery area. Thus successfully opening up prospect of propagation there for the first time in many decades. It is believed that this natural nucleus guarantees an increased population for the Machias in the near future.

Maine Dept. of Inland Fisheries

Impact of Access

Among other things, fishery biologists in New Mexico have been working to make fishing waters more accessible. On Bull Lake, a 3600 acre body of water on the Wind River Indian Reservation, fishing use amounted to an estimated 500 man days of angling in 1954. A new access road to the lake was built in 1957. In the first 8 months of 1958, following the opening of the new access road, fishing use jumped to over 18,000 man days.

U. S. Fish & Wildlife Service

Draw Downs, Management Tool

Wisconsin Fish Management Supervisor John G. Brasch has declared that certain lake draw downs as a fish management tool appear to limit rough fish species abundance by limiting food supplies. And they appear to have a selective "thinning" effect on blue gills at least. At proper times and under adequate controls they may be of considerable use where carp or pan fish problems exist.

Wisconsin Conservation Bulletin.

Illinois Reclaims Maple Lake

For twenty years, 55 acre Maple Lake in the Palos Forest Preserve in Illinois furnished record recreational fishing. In 1946 for example anglers harvested 200 lbs. per acre

of largemouth bass, blue gills, crappies and bull heads.

Following the introduction of carp in 1948 the quality of sport fishing declined as the carp increased. In September of 1958 Maple Lake was reclaimed by the destruction of the fish population with toxicants and restocked with largemouth bass, blue gills, and bull heads. As a result of reclamation some 20,000 lbs. of fish were killed. Of the total 70% were carp, 20% gold fish, suckers, gizzard shad, and stunted young of other species. It figured out that of the 360 lbs. of fish per acre, less than 40 lbs. were sport fish.

Sport Fishing Institute Bulletin.

Fishing Access Areas In Alabama

Robert Folsom, former Alabama Conservation Director, reported a new program of securing and developing public access to Alabama's waters. Since 1957 5 public landings with boat ramps, roads and parking areas were established. Current plans call for at least 41 additional access areas throughout the state.

Restricts Fishing Derbies

Conservation Commissioner George A. Selke of Minnesota, recently signed an order which restricts the fishing derby, many times exploited for commercial gain. The order makes it illegal for any person to release in any Minnesota waters any fish which have been tagged or otherwise marked for identification without an official written permit. Under the order it shall also be illegal to "pay any reward or prize to any person for the taking or recovery of any tagged or otherwise identified fish from the waters of this state." Authorized, with a permit however, was the release of tagged or identified fish for scientific purposes or when it is otherwise beneficial to the preservation, protection and propagation of fish.

Minnesota Conservation News.

Reasons for Buying

A statistical trade report entitled "The Outboard Market, 1958" summarized the principal "first choice" reasons given by purchasers of motors and boats manufactured by OBC member companies. The percentage distribution of reasons for buying was distributed as follows: (M—Motors; B—Boats)

	1955		1956		1957		1958	
	M	B	M	B	M	B	M	B
Hunting	8.7	8.8	8.9	8.4	8.7	8.4	3.7	5.0
Fishing	76.8	68.9	72.2	63.8	67.6	63.9	68.3	67.0
Racing .....	.6	.9	.7	1.2	.6	.6	.7	.6
Cruising	11.9	18.4	14.8	21.2	17.5	17.5	19.5	20.9
Skiing	1.6	2.1	3.0	4.9	5.2	5.2	7.3	5.6
Rental .....	.1	.6	.1	.2	.1	.1	.1	.4
Commercial ..	.3	.3	.3	.3	.3	.3	.4	.5

Outboard Boating Club of America.

NEW

for Pennsylvania Fishermen

Every Fishing Stream and Lake, Roads and Public Lands Shown on Detailed County Maps

The Pennsylvania Fish Commission is pleased to be able to offer a totally new kind of waters-highway maps for fishermen—maps by which fishermen can locate and fish off-the-beaten-path-waters and waters they never before knew existed.

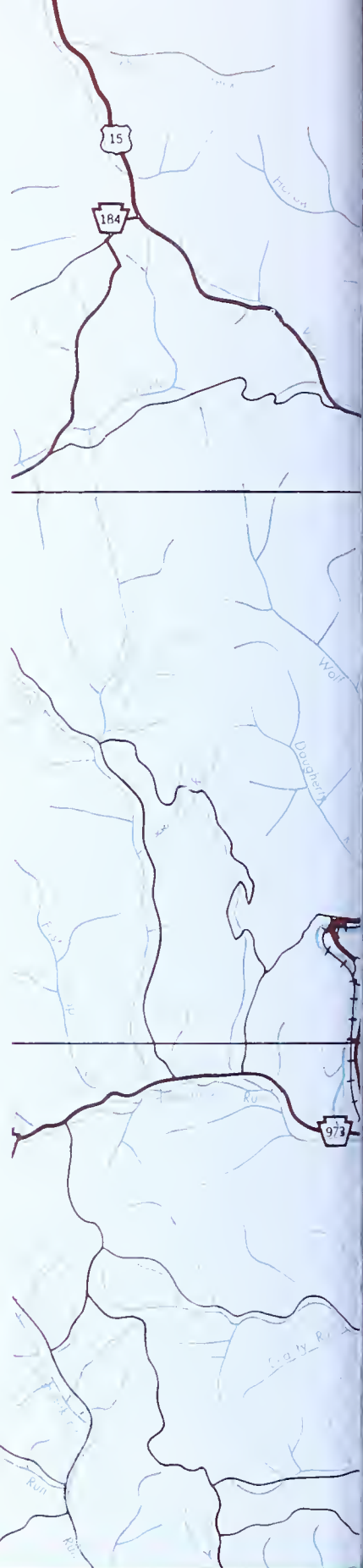
In planning this new fishing aid, it was resolved to produce maps of uniform size or that would fold to uniform size that could be carried conveniently in fishing jacket or tackle box; of uniform scale; of a scale sufficiently large to permit showing and naming every stream and public lake that lend themselves to hook and line fishing; that would show the highway system down to township roads; that would show and distinguish one from another, the public owned lands in the Commonwealth; that every fisherman could afford to buy; that would not be intended as show pieces, nor all things for all people, but truly functional for the fishermen.

Those who have seen the product are enthusiastic and say the Commission has succeeded on all counts and has produced the most practical fisherman's map they have ever seen.

To give an idea of how detailed yet easy to read these maps are, a portion of the Lycoming county map has been reproduced on these cover pages with the legend block inserted.

Within the next year, all Pennsylvania counties will be mapped. Presently, only those maps and the counties charted on the list below are available. Note that some maps are of two counties and cost 50¢. The single county maps cost 35¢.

For information on bulk purchases and discounts available to sportsmen's clubs, license issuing agencies, stores and resorts, write to Conservation Education Division, Pennsylvania Fish Commission, Harrisburg, Pa.



sylvania Fish Commission, South Office Building, Harrisburg, Pa.

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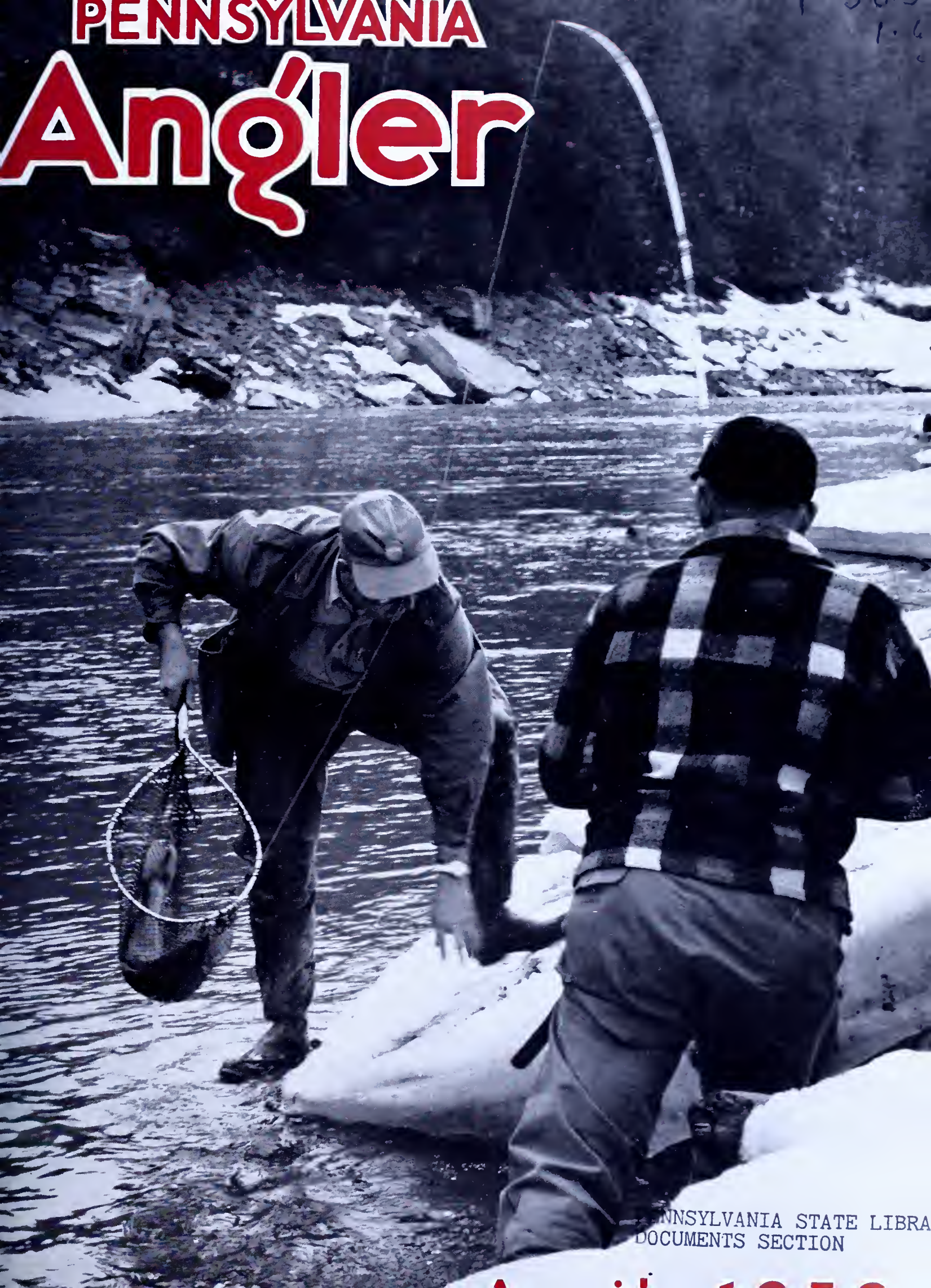
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DOCUMENTS SECTION

The Narrowing Margin

The time is rapidly approaching when any chance margin of safety for wildlife which may exist at present will be eliminated. Before that time arrives, we must be prepared to insist on a reasonable safety factor which can be justified by factual evidence. Not much longer may we be content to try to correct a pollution problem for instance, after the damage is evident. We must begin to concern ourselves with the prevention of such damage while that is yet possible. We must be prepared to meet the challenge posed by our shrinking water supply, or all our resources—wildlife and otherwise—may be needlessly sacrificed on the altar of ignorance.

Our water supply is almost completely dependent on soil conditions. A condition which will allow water to percolate into the soil and refill the underground water reservoir is required, rather than having a condition where it runs off the surface of the earth as though it were the roof of a house, carrying with it the fertile top soil so vital to all living things. The Soil Conservation Service estimates this loss at more than four billion tons a year. That is six times as much soil as is currently being used by all the farm crops in the United States annually—or putting it another way, the soil that is dumping into the Atlantic and Pacific Oceans each year is enough to grow all the crops in the U. S. for a period of six years. With the predicted growth of population, there will come a time when we will wish that this soil was back on the ground from whence it came; that is provided we are still around at that time for such wishful thinking.

—A. F. C. GREENE
in *Wyoming Wildlife*

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THE COVER: LANDING A WALLEYE ON WALLENPAUPACK RIVER

—Photo by Johnny Nicklas

(See Story on Page 16)

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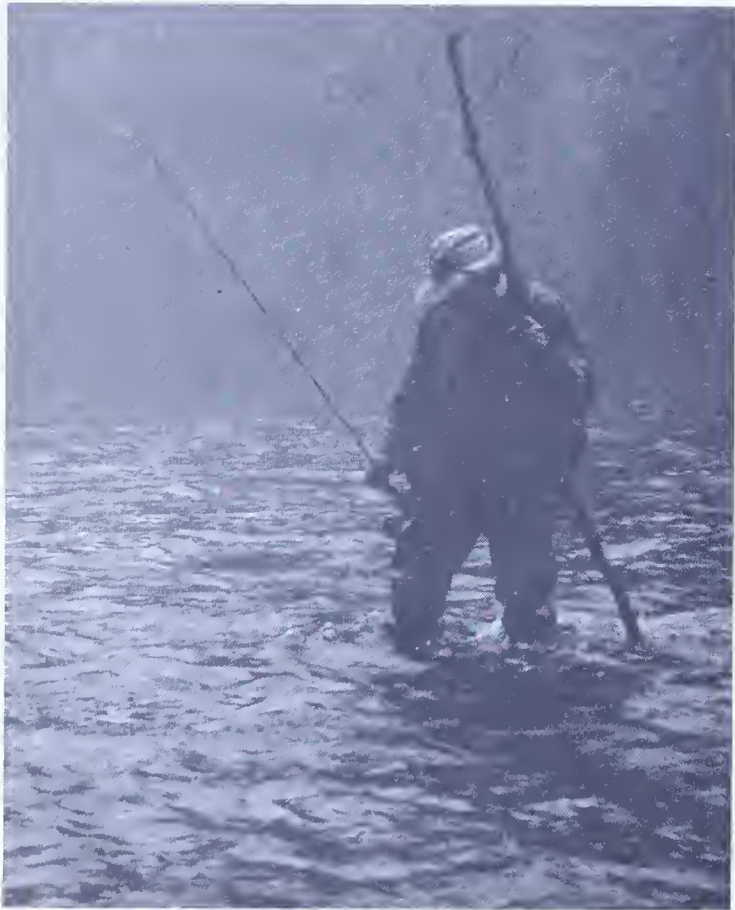
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Tips On Trout Fishing

By **DON SHINER**

(photographs by author)



A WADING STAFF will prove handy when wading across swift streams.

Right about this time of year it seems perfectly natural for the typewriter keys to pound out something on trout fishing. I've been thinking about this topic now for the past several weeks. I started to write a story on the topic of early season fly fishing. After the first few paragraphs were completed and I was well on my way into the main part of the article, it occurred to me that I should select another subject to add variety to the contents of the magazine.

Bait fishing, with special emphasis on minnows and catching lunker size brown trout, might prove interesting reading. Equally interesting would be a discussion on trout tackle or the currents and eddies in a trout stream. These topics would readily find an audience among a certain number of readers. But rather than assemble something which would hold interest for a few, I wanted a topic that would interest practically every trout fisherman, and have something positive to say to each one, varied as their preference might be. All this pointed to a factual type article, covering a series of tips which would influence their trout fishing, making it a little more interesting, thrilling and perhaps successful.

With the question as to the type article finally settled, it now meant thinking about past experiences and selecting several that would aid others in their pursuit of trout. One by one the following group was assembled. Pause for several moments to read these various trout fishing tips. They are all highly practical. Some may help you to find more fun astream this year.

The Wading Staff. Opening day and for several weeks following, trout streams are normally running higher than later in the season. Spring rains coupled with melting snow and ice in the mountains raise streams to flood stage, with currents wild, strong and savage. Naturally fishermen will want to try crossing the streams at various points. When attempting such crossing, a wading staff (stout tree limb) is most comforting in mid-stream and a great aid in helping to keep your balance in the face of the strong currents. Suitable limbs are generally available on the shoreline. After the staff has helped you wade safely across the stream, stand the limb against a tree so it is handy for you or someone else to use again.



BOOT CHAINS make walking on slippery rocks as easy as walking on sand.

Boot Chains for Traction. Wear a pair of wading boot chains for the early season trout fishing. The knack of walking on slippery rocks will soon be re-acquired. But right now, as the season opens, most fishermen are out of practice and not sure-footed as they will be later. Wading chains are one of most valuable fishing aids; insurance against a cold swim in icy waters. These chains are available at most sport shops. Or make a pair from scrap pieces of leather obtainable at shoe or harness shops and pieces of chains.



THIS HANDKERCHIEF draped over your neck will guard against insect bites.

Repelling Insect Attacks. Deer flies, gnats, "no-see-ums," mosquitoes and other biting insects are usually abundant along streams that run through heavy woods and foliage. Fish through these areas in comfort by first placing a few drops of insect repellent on your skin (neck, ears, cheek, chin and arms, and then draping a big handkerchief over your head and neck. Dressed in this manner, you are able to concentrate on the flies on the water rather than the flies buzzing about in the air.

The Caterpillar Season. Woolly worm flies are excellent trout lures during the tent caterpillar season. The month of May finds fence row trees and brush (especially those in the wild cherry family) covered with silvery nets or tents. Many of these woolly worms crawl and fall into the streams where they are quickly snatched by trout. A black-brown-white pattern, or solid brown, black or green fly dropped lightly in the current will frequently be grabbed by husky trout. Cast the worm fly beneath overhanging limbs and near patches of tall grass on the bank. Trout frequently take up positions near these spots to wait the arrival of fallen caterpillars.



DURING THE tent caterpillar season, be sure to use the woolly worm fly (left) for trout. On the right is the caterpillar of one of the swallowtail butterflies.

Bridges and Shadows. Trout like to hide in the shadows of big rocks, logs, shoreline trees and bridges. As the sun moves across the heavens, the shadows in the streams also move, and likewise the trout. Trout will move from one side of the bridge to the other as the bridge shadow moves up or down stream. Hence spots in streams that seem devoid of fish at the moment may have several nice trout moving in an hour or two later. Concentrating more of your time in the shadows will pay off in more trout.



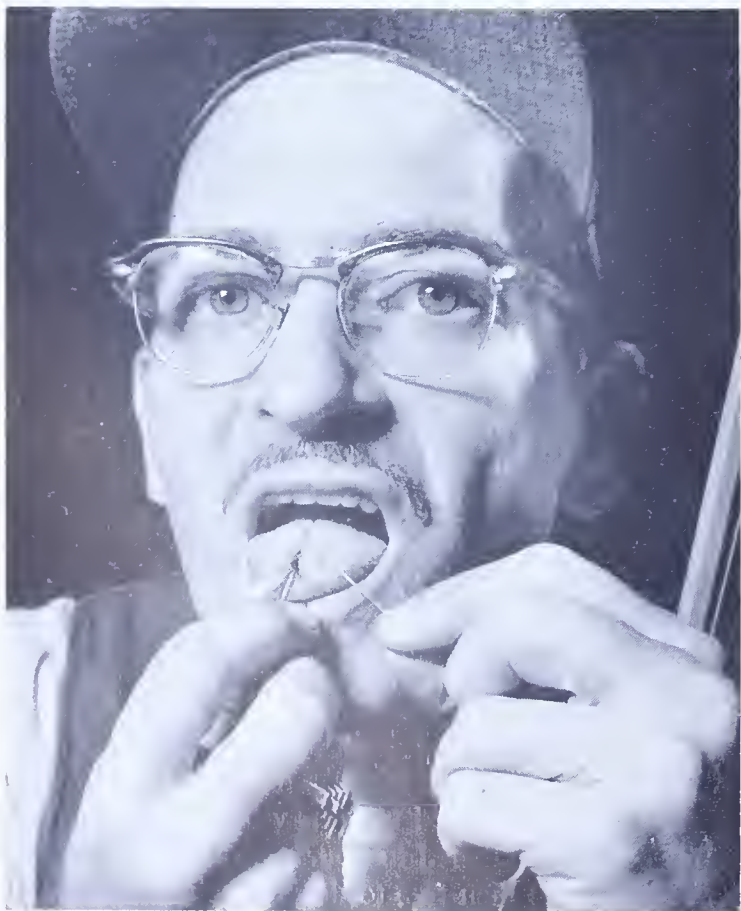
DEEP HOLES in the shadows of bridges are always good spots for trout.

A Light for Night. A flash light is an absolute necessity for night fishing. Models having clips, enabling the light to be fastened to your vest or shirt, are best. With the light fastened to your person in this manner, your hands are then free to do other chores. However,



FLASH LIGHTS with clips fastened to the side of the case are best for night fishing.

YOUR TONGUE will help you thread the leader through the eye of the fly.



don't flash the light freely about on the water. This spooks feeding trout. When you find it necessary to use the light, turn away from the water you are fishing and face toward shore.

Night flying insects are soon attracted to your light and fly maddeningly close to your face. A piece of yellow cellophane (the color less appealing to insects, as found by various scientific tests) fitted over the lens will eliminate this insect problem

Your Sensitive Tongue. Try this particular method of tying a fly to your leader without the aid of light when night fishing. First touch the eye of the trout fly with your tongue. Next gently jab the end of the tippet or leader against your tongue. Your sense of touch will actually guide the tippet right up to and eventually through the eye of the small fly. This is also a good method for those with failing eyes when attempting to thread a fly while the light is fading from the horizon.



TO PREVENT breaking fine leaders and missing trout, keep hooks needle sharp.

Hooks Sharp As Needles. A long, light weight leader is the secret of much success when fishing hard fished trout streams. But light leaders (4X to 6X) are easily broken. Keep the hook needle sharp so that the slightest pressure on the light tippet will sink the hook swiftly into the jaw of the jumping trout.

Immediately after fastening the fly to the leader, rub the point several times over a hone or sand stone picked up from the creek bank. And Whenever the fly has become snagged on a back cast or under water debris, stop for a moment and examine the point. If not broken, the hook invariably needs the point



TROUT USUALLY pull for calm water when the main streams are high and roiled. Be sure to try mill races and back waters at this time.

resharpened or bent back into correct alinement. This will put more fish into your creel.

Calm Water Trout. With streams banked full and currents strong enough to knock over a horse, trout seek protection in the calm eddies, backwater and coves. Good places to look for trout are in more gentle flowing mill streams and races which empty into the main creek, or small backwaters that flood lowland or ditches near the main stream. Trout often congregate in such places rather than face the full fury of the main stream's current. Don't pass up these "calm" waters. Sometimes they are chunked full of trout, all eager to bite!

CENTIPEDES are not exactly popular trout baits. Never-the-less, they will catch plenty of trout.



Centipedes for Bait. Probably only a handful of trout fishermen in Pennsylvania have used centipedes for bait. But they work fine. These many-legged insects are found beneath rotted logs, stones and in saw-dust piles. Gather these along the streamside when your supply of bait is running short. Insert a small hook through the body and cast it gently into the current so that it rolls along the bottom. Big trout will take these readily. So will bass, chubs and sunfish. This is an excellent bait and one that is readily available on the stream bank.



TRY TROUT fishing with bass plugs. These lures frequently take trout in the "lunker" size.

Bass Plugs For Trout. Big brown, rainbow and squaretails will hit large bass plugs. Though spinning or casting large bass lures is not a popular method of taking trout, this is often an excellent method of fishing. These big trout will gab these large lures simply because they like food in mouth-filling proportions. The large lure wobbling through the current may suggest an easily caught minnow, frog, crayfish or some other edible creature that is foolish enough to swim within range. But one word of advice; retrieve the lure close to the bottom. Trout are reluctant to come up to the surface for a big plug during the early spring when the water is high and roiled.

Handling Trout Safely. Which is best, dry or wet hands when handling trout? This is an age old argument, but the truth of the matter is, dry hands are less likely to injure fish. The extra pressure needed to hold a squirming, slippery fish in wet hands frequently damages vital organs. With dry hands, less pressure is needed to hold a fish securely while working a hook



WHEN YOU expect to release a trout, handle it carefully with dry hands, or work the hook loose without lifting trout from the water.

free. True dry hands will remove more body film or slime, thus allow fungus to attack the body of a released trout. But this protective coating is quickly secreted by trout, hence the amount removed is quickly replaced.

So handle fish with dry hands. This means more released trout will survive.

Interesting Film On Outdoor Fish Cookery

Nine American fish "cook-outs," filmed to reflect the heritage and tradition of the areas portrayed, are shown in a new sound-color, 16 mm. film just released by the Department of the Interior, Washington, D. C.

The film is designed to intrigue those who cook outdoors—either in the open spaces or in their own backyards.

The film is the 16th in a series of fishery educational motion pictures produced by the Bureau of Commercial Fisheries, United States Fish and Wildlife Service, all of which are available at that address to interested groups on a **free loan basis**. A showing requires 28 minutes. The film was produced under the Saltonstall-Kennedy Act to aid in the development of the domestic fishing industry and to expand the market for fishery products. It has been cleared for television.

The picture starts with a colorful Indian salmon barbeque on Neah Bay, Washington, and features salmon being caught and cooked in the manner typical of the days when the northwest was young. This method can be adapted for use in one's own backyard.

Another sequence is taken from the other side of the country—a real New England clambake at Gloucester, Massachusetts—where clambakes have been the vogue since the days of the colonies.

Gloucester Point, Virginia, where oyster roasts have been popular since the historic days of Jamestown and Williamsburg is the scene of another sequence in the film.

Cold weather fans are not forgotten and will get a thrill out of the ice fishing for smelt and the cooking of perch up at Menominee, Michigan, across the line from Marinette, Wisconsin.

Then there is the Carolina "pink bark stew" cooked in a bayou setting, and a Florida mullet smoke, showing the fish caught near Stuart and Salerno in Martin County and smoked on a fashionable patio in Miami; not to forget the shrimp boil at Morgan City with its "do-it-yourself" tips.

Of course there is the Maine lobster boil—this one featuring colorful scenes at the famous Rockland Seafood Festival, where even persons with small appetites get two lobsters and where everyone has fun.

Restoration at Prospect Park



THE TRADITIONAL "Groundbreaking." On the business end of the shovel is LeRoy F. "Shorty" Manning, who started it all in Prospect Park. To his right is Borough Councilman Malcolm Lee. Behind them, from left to right: Edward Kramer, engineer for the Damon & Foster firm; Robert C. Gorbey, council president; Roland P. Lamm, councilman; John D. Allison, Burgess; and Matthew Flynn, councilman.

—Chester Times photo

It's only a pinpoint, even on a large scale map of Delaware County in southeastern Pennsylvania, but it's another water area formerly worthless—an eyesore, actually—that is being transformed into a prime recreational asset.

Prospect Park Lake was a two-acre body of water, developed in the mid-20's on a plot of land deeded to the borough for that purpose. Gradually through the years, however, it became silt laden then weed choked. It served only to breed mosquitoes and became a catchall for litter and discard.

The older residents could recall its former beauty and utility. In recent years it was viewed longingly by many who knew what it was and what it could be again. Included among the many was one "Shorty" Manning, who for more years than he cares to remember has been a dynamo in sportsmen's affairs, right on up to the state level in the Pennsylvania Federation of Sportsmen's Club.

"Shorty" is one of the last who seeks personal laurels. But efforts such as are now underway in his home town must be sparked by someone and in this instance Mr. M. was it.

In the July 1958 *ANGLER*, a similar undertaking in New Castle, in the opposite corner of the state, was detailed in a feature entitled "A Lake Is Reborn." It too was started by one man—one Jack Gerson. To the credit of both communities, and it can happen in any community where the opportunity exists when the Shorty Mannings and the Jack Gersons rear themselves, the primer movers were soon flanked by other folks who are equally civic minded and dedicated to the common good. When fronts like these are presented, things get done.

In Prospect Park it went like this. Six years ago "Shorty" began stirring things up. While everyone agreed something should be done, it was only about a year ago when agreement in the borough council was matched with positive action. The action was spearheaded in the official family by Councilman Malcolm Lee and Burgess John Allison. Result: a \$5,000 appropriation became part of the borough budget. Meanwhile, "Shorty" and his friends went to work to raise the needed additional funds. They came up with another \$2400 through a popular subscription that spread well beyond the immediate community.



THE START of the silt removal. When the job is finished the lake will extend from the foreground back to the trees and off the pictured area to the right.

—Chester Times photo

The contract for dredging was put out for bids and, in the due course of events, actual work got underway.

While the silt removal job which constitutes the biggest phase of the undertaking progresses, other engineering, landscaping and lake management details are being worked out. Cooperating in these efforts are a local engineering firm and the Pennsylvania Fish Commission.

Also on the agenda for this spring is a clean-up job, both in the lake and upstream areas. The Boy Scouts have accepted this detail.

When completed there will again be a two-acre water area approximately 8 feet at the deepest point, with a possible over-all average depth of from 3 to 4 feet. It will be a warm water fishing facility, essentially for the youngsters, populated with pan fish.

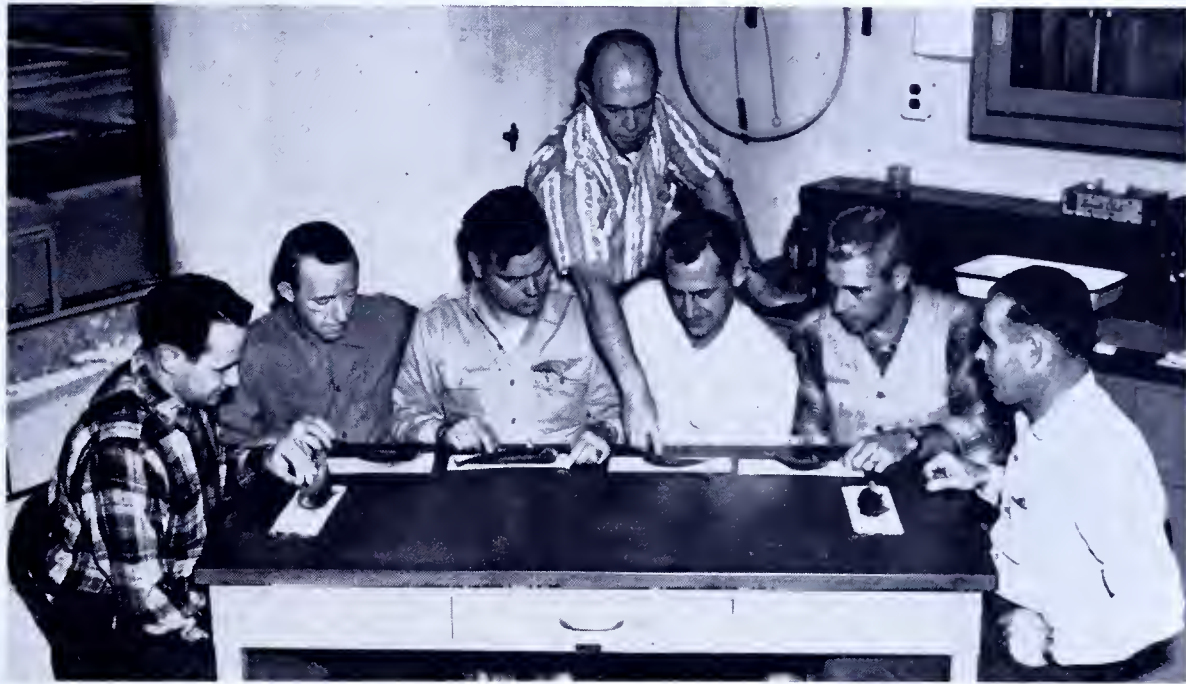
And another example of self help will become a reality. Just a pinpoint on the fishing map of the Commonwealth, but another step on the road to more fishing in Pennsylvania.—C. R. Glover.

There's "Northerns" In Pennsylvania, Too!

Bill Lee of Titusville hoisting a 30" long Northern Pike taken a few moments earlier through a hole in the ice on Conneaut Lake in Crawford County early last winter. As reported by Steve Szalewicz, Oil City outdoor writer, the pike took some 70 feet of line, baited with a minnow, from the business end of a tip-up before Fisherman Lee went to work.



School Days



WARDEN TRAINEES being shown the distinguishing characteristics of trout by DeWayne Campbell, Fish Commission biologist, in one of the numerous courses of the Commission's newly inaugurated school for its law enforcement division. Seated around the table, left to right, are: Edward Bell, Walter Burkhart, James Hazen, Lee Shortess, Raymond Hoover and Norman Ely.

A formal technical training school for warden trainees and wardens has become a part of the Pennsylvania Fish Commission's new program. Developed by and under the direction of Gordon Trembley, chief aquatic biologist, the first two-weeks term ran in February of this year at the Benner Spring Fish Research Station.

The subjects included in the course were water chemistry, pollution problems, limnology, fish food organisms, stream and lake improvement, fish predators, fish diseases, fish identification, fish culture, fishery research, fishery management, hatchery and stocking procedures, fishing technique and tackle, and the role of the fish warden in lake and access area acquisition, construction and development.

This initial class was composed of six warden trainees and six regularly assigned district wardens. The latter were selected by their supervisors from the

regular wardens who asked for the opportunity to attend. For the trainees the school will continue to be the final phase of training before being assigned to duty in the field. Earlier periods of instruction for the trainees involved law enforcement procedures. Instruction and direction in this phase, along with public relations and education endeavors, will continue under the direction of the regional warden supervisors pending appointments to full warden status.

The staff of instructors for this first term included C. R. Studholme, U. S. Fish & Wildlife Service; George Harvey, Penn State University; and personnel of the Commission's biology division. Among the latter were Gordon Trembley, Arthur Bradford, DeWayne Campbell, Jack Miller, Dan Reinhold, and Keen Buss. Dewey Sorenson, superintendent of hatcheries, and Thomas O'Hara, chief engineer, also presided over sessions concerning their respective activities.

Fly Tying

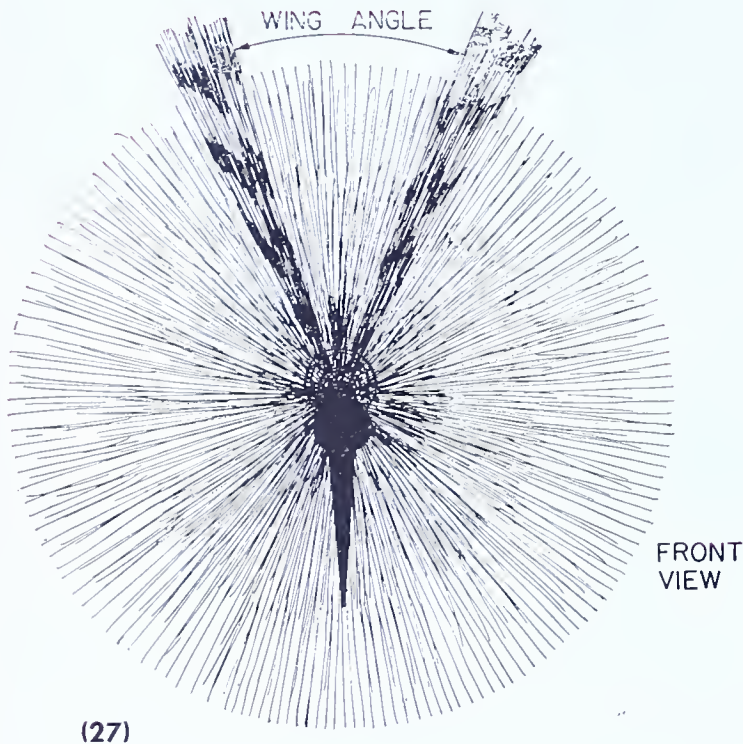
... via simplified methods

Part IV of a series

By **GEORGE W. HARVEY**

Associate Professor, College of Physical
Education and Athletics
The Pennsylvania State University

Illustrations by James E. Cartey

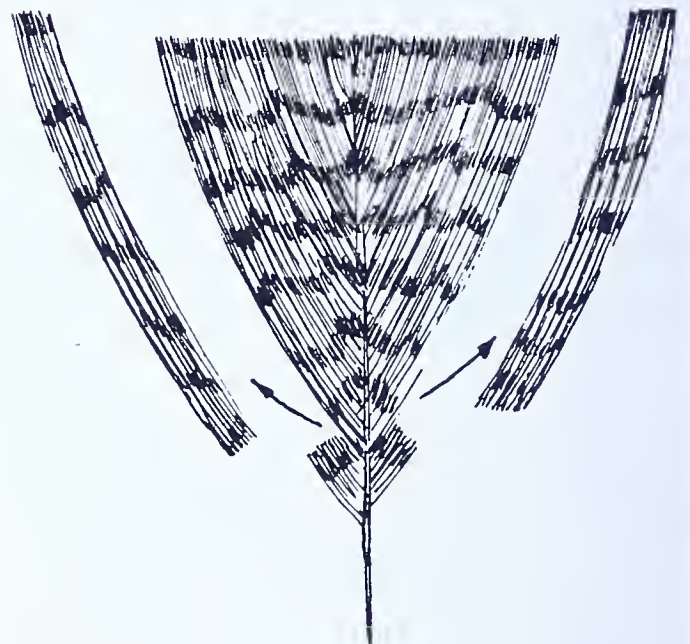


The winged dry fly is tied so that it will float on the surface of the water. However, it is supposed to float with the wings either in an upright, or spent wing position, depending, of course, on how it was originally constructed. With the winged dry fly the tyer must pay more attention to detail than with any other type of fly. For the standard fly tied on regular length shank hooks, the hackle should be sized very carefully. The wings usually give the beginner the most trouble. Remember, it is better to have the wings a little short than too long. Wings that are too long will make the fly top-heavy and will have a tendency to spin and twist the leader when one is casting. The tail should be as long as the shank of the hook (exception, short and long-shank hooks), and stiff enough, along with the hackle, to support the fly. The body of the fly should be slim rather than heavy.

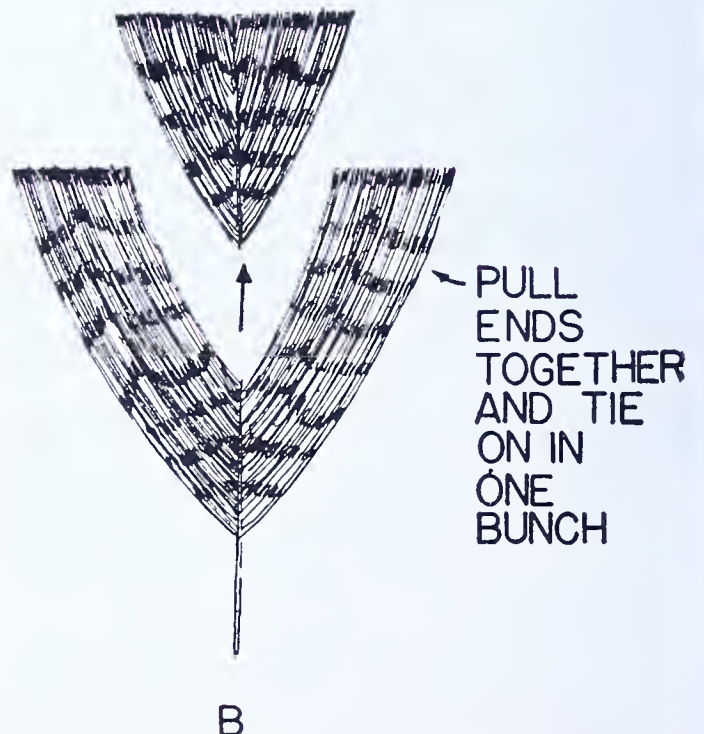
Always keep in mind that no matter how well dressed the fly may be, it is no better than the material used to construct it. Always use the best material available and continually strive for perfection.

Diagram No. 27

Diagram No. 27 illustrates the approximate length and angle to cock the upright wings on a dry fly. It would be well for the neophyte tyer to study the diagram and simulate the angle as closely as possible. One should realize that there may be considerable



(28)



variance with each hook size insofar as the length of the wing is concerned because the length of the wing is usually about one-fourth longer than the hackle. The tendency is for the beginner to make the wings too long and, when this happens on the dry fly, it becomes top heavy and does not ride the water as it should.

Diagram No. 28

This diagram illustrates the most common methods of preparing breast, side or flank feathers of the various ducks for the divided wing. First, one should select a feather that is well marked and of uniform quality. Now strip off all soft and downy fibers. If the feather is large, sections may be cut from either side (A), and placed together so that the ends are even. Sometimes one may be able to get enough fibers from one side of the feather for the wings, thus eliminating cutting from each side. When the feathers are small and only have enough fibers to make one pair of wings, the best method is to cut out the center as illustrated (B). The length of wings determines how far back to cut out the center section.

DIVIDED WING

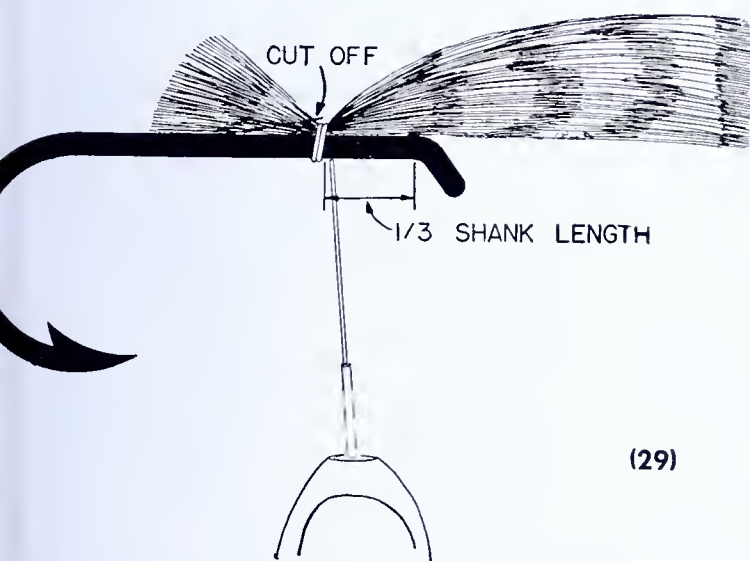


Diagram No. 29

Divided Wing Dry Fly. We are now ready to set the wings. First, attach tying thread to hook and wind up to one-third distance back of eye. If sections cut from the side of the feather are used, be sure the ends of the fibers are even. Roll together and hold in compact bunch between thumb and finger of the left hand with the tip ends on the outside. The fibers are held in the opposite position from the way they are held when tying in the tail. The solid bunch of fibers is tied in approximately one-third of the distance back of the eye, using the same technique as described in Diagram No. 4. Remember, the wings should be about one-fourth longer than the length of the fibers of the hackle on this fly. Make enough turns to hold the fibers fast, then cut off excess on angle as illustrated.

DIVIDED WING

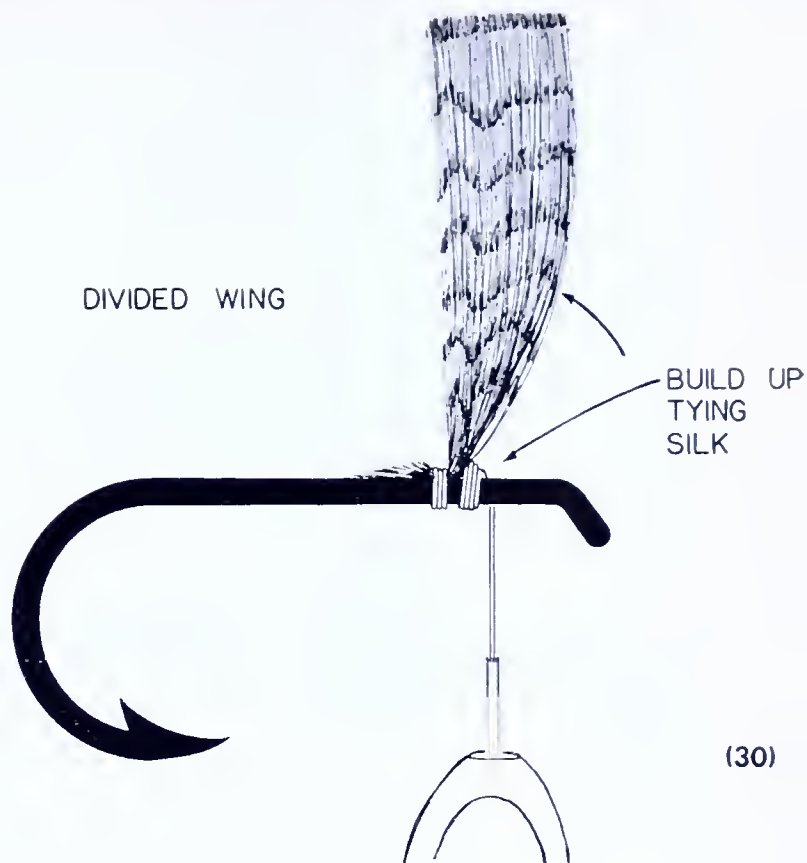
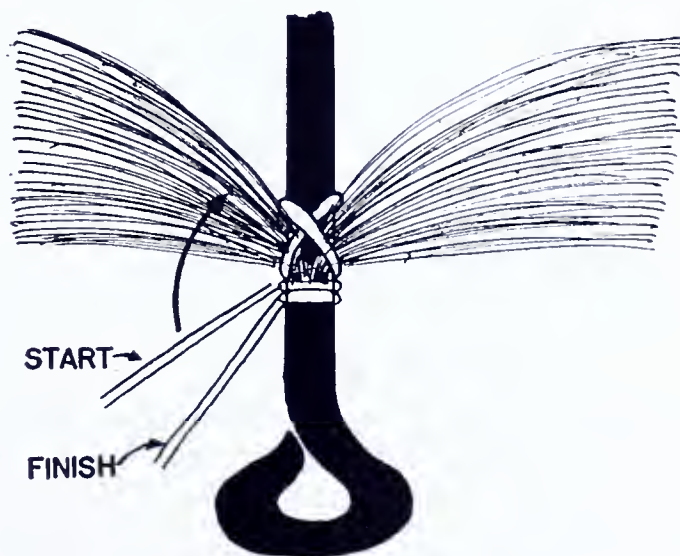


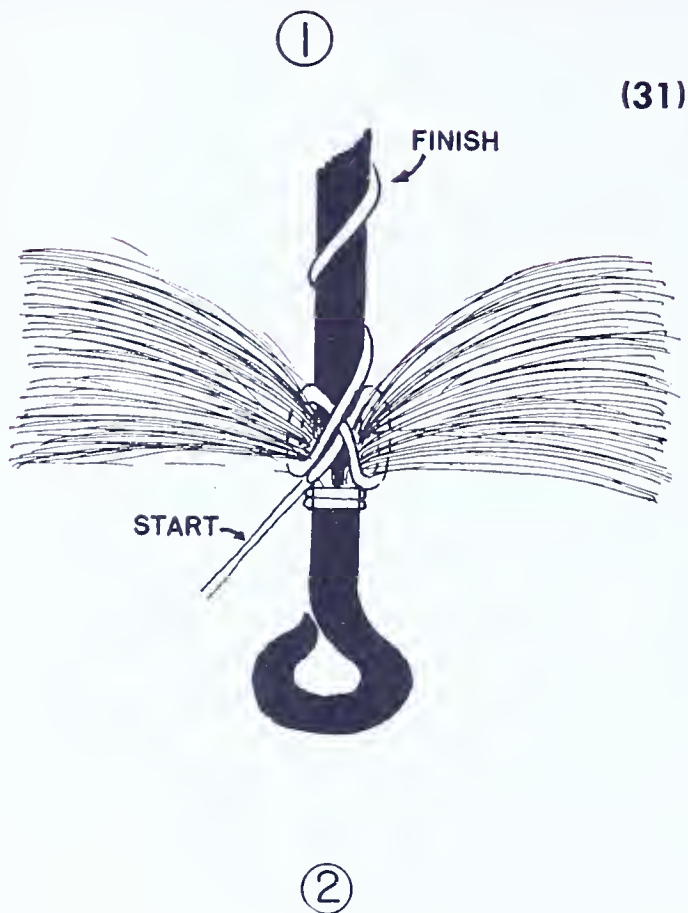
Diagram No. 30

Diagram 30 illustrates the next step. Grasp wing material and pull to upright position and wind tying silk in front of the wings. Make enough turns tight in against base to form a wedge that will hold wing material perpendicular to the shank of the hook.

Diagram No. 31

(1) Use both hands and separate fibers into two even bunches. The tying silk is now at the position labeled, "start." Hold wing on left side and wind back between wings. Let wing go on left and grasp wing on right side, and wind in under shank at rear of wings; then back across to the front and under to starting position marked, "finish." Cock wings as illustrated in Diagram No. 27, and repeat winding thread in criss-cross pattern until wings cock at the desired angle. Usually two or three turns are sufficient. After





two to four turns in front of the wings. The turns of hackle that are wound on in front of the wings should be kept as close to the wings as is possible. Complete fly with half hitches or the whip finish.

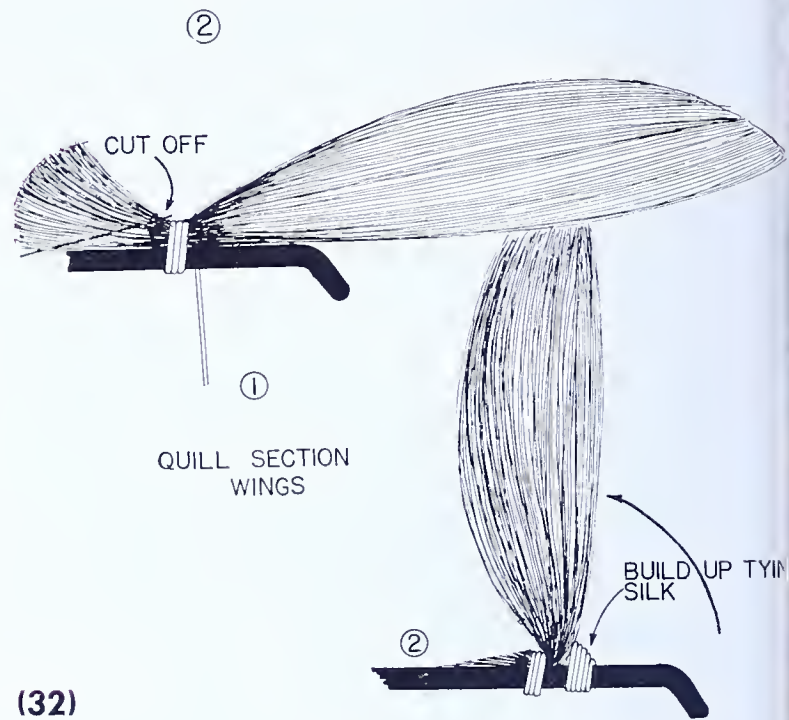


Diagram No. 32

Quill Section Wings. The quill section winged dry fly is gradually losing its popularity simply because it is not very durable. The spent and hair winged flies are gradually creeping in, and I believe you will eventually see them replace the quill section wings wherever it is possible.

Diagram No. 32 illustrates how this type of wing is set. This operation should not be too difficult because many of the procedures are quite similar to the setting of quill wings on the wet fly.

Secure tying thread and wind up to one-third distance back of eye. Cut wing sections. It is best to take these sections from the lower part of the quills, where the curvature is more pronounced. Lay sections together so that convex sides are against one another. Tie in as illustrated (1), one-third distance back of eye. There is one important detail to remember. When you grasp the sections between the thumb and index finger of the left hand, grasp them in such a way that, when they are held on the top of the hook and the thumb and finger are squeezed together prior to tightening up the thread, the ends of the thumb and finger are at least up to, or slightly extending over the eye of the hook. This procedure prevents separation and roll of wing fibers. As soon as wings are secured, cut off excess stump end. Next, grasp wings firmly as close to the hook as is possible and pull to upright position (2). Now, build up wedge of trying thread in front to hold wings in perpendicular position. If the wings need to be separated, criss-cross as

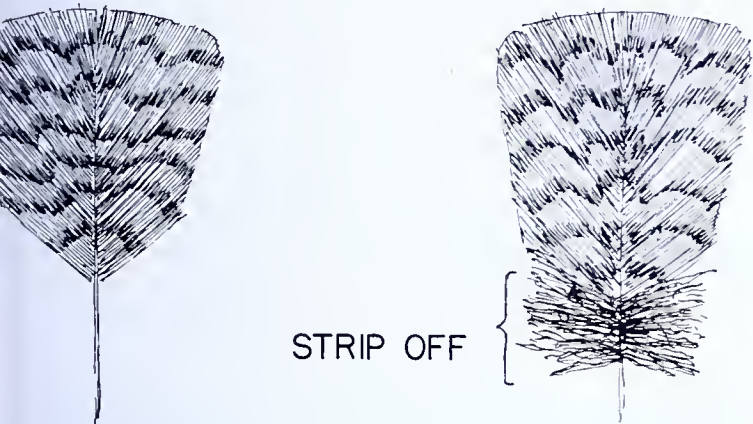
the necessary criss-crosses have been made, you should end with the silk in front of wings as in "start." (2) now grasp wing on left side with thumb and index finger of left hand and cross silk back between, and to the rear of right wing. Release left wing and grasp right wing. Bring silk around base of right wing and across on top of shank, and back between wings to rear of left wing. Release right wing and grasp left wing, and wind thread around base and back between the wings. Now, spiral silk back along the shank of the hook. If too much tension is applied during this last operation, the silk will bend the wings and slip off, or will pull them too close together. When you finish, the wings should be cocked approximately as illustrated in Diagram No. 27. After several pairs of wings have been set, one is usually able to judge the correct tension for this operation.

The tying silk is now spiralled back to the center of the shank and the tail is tied in. Be sure to tie in enough tail fibers to support the weight of the fly. Since this is a winged dry fly, it is a good idea not to run the body tight up against the wings. Leave a small space between the body and the wings. This will make it easier to tie in and to wind on the hackles. This procedure should be strictly observed when dubbing is used for the body.

Now tie in both hackles, as previously described, behind the wings. Wind on the first hackle behind the wings and tie off on the bottom in front of the wings. Follow directions under Diagram No. 16 for the second hackle, but try to save enough hackle to make

in Diagram No. 31, (1). *Never* "figure-eight" around base of wings as (2) in Diagram No. 31. This criss-cross should be made very loose. Grasp the base of the wing between the thumb and finger of the left hand and squeeze gently, using about the same pressure as when the wing was originally tied on. Tighten up criss-cross and then spiral thread back on shank, and finish fly as described in Diagram No. 31.

BREAST FEATHER



FAN WINGS (33)

Diagram No. 33

The Fan Wing. Diagram No. 33 illustrates the way breast feathers are prepared for the fan-wing flies. Carefully match a pair of breast feathers and strip off down to the point where the wings are the correct size for the fly you are tying. Do not cut off quill. Now continue as described under Diagram 34 below.

FAN WING

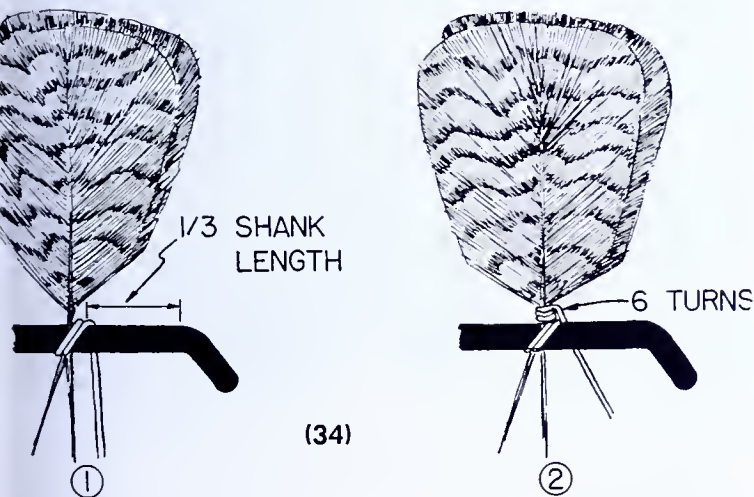
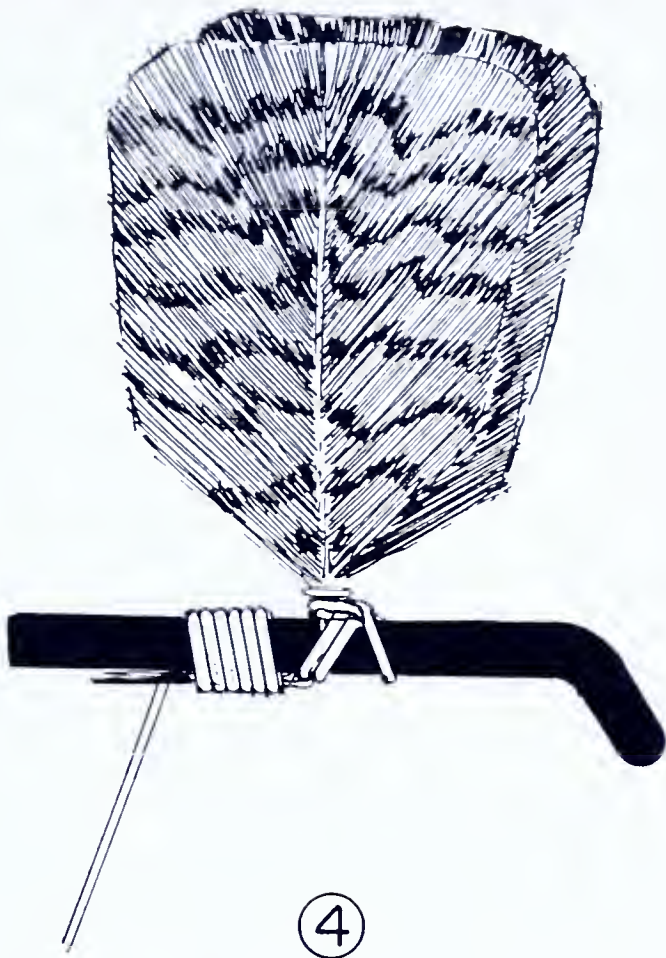


Diagram No. 34

Tying thread should be one-third distance back of eye. Grasp wings in left hand so that convex sides are together. Hold wings on hook so that the stems straddle the shank and a little of stem protrudes above the shank. Make enough turns to secure stems as in (1). Hold wings tight and make enough additional turns around stems above shank, binding them securely together (2). Brace wings by winding silk down



around shank as diagrammed in (3). Be sure the wings are not cocked to the right or left, but are in perfect alignment with the longitudinal plane of the shank of the hook. In order to correct misalignment, in case the wings are cocked to the right, take a turn or two clockwise around the base of the wings; then bring silk down under shank in front, applying enough tension to pull the wings into the proper alignment. If wings are cocked to the left, reverse procedure. When the wings are perfectly balanced, pull stems up and

tie fast to shank as in (4). Finish fly in the usual manner.

NOTE; I have not illustrated the hair and spent wing flies. The hair wing is tied exactly the same as the divided wing. Hackle points are used for most spent winged flies. Tie wings on so that top sides of hackle are together. Now separate wings and criss-cross between them, at the same time holding wings in spent position. Make enough criss-crosses to hold wings in spent position. The rest of the procedures are the same as the ones just described.

No Complaints Here

Editor's Note: Very few days go by throughout the year that word does not reach Fish Commission headquarters in Harrisburg of noteworthy successes by Pennsylvania's fishermen who extend or concentrate their angling efforts on the pikes and basses in Commonwealth waters.

As a picture is worth a thousand words—actually more, when fishermen are concerned—the Angler, several months ago, added “catch” pictures and details to its features. They will be continued and are hoped will serve as constant reminders that there is a lot of good fishing to be had in Pennsylvania for those who want it well enough to really fish.

Admittedly, access to many of Pennsylvania's waters is a problem, especially for a stranger to any given locality. But as the Fish Commission's program of access site acquisition and development progresses, this will become less of a problem. Meanwhile, between those sites already developed, existing boat liveries and the proper approach to owners of riparian lands, there remains no reason for any fisherman to deny himself this great piece of the state's sport fishing opportunity.

“... the walleye was 24” long and the larger bass averaged 4 pounds. We returned six others on this trip, each of which weighed a pound or over.

“The catch was made last November 11, between noon and 5 P.M., on the Susquehanna River in the vicinity of Speecheville, about ten miles up river from



ONE WALLEYE and eight smallmouth bass, formerly of the Susquehanna River, and friends—John R. Matthews (left) and William Haubenschild (right) both of Harrisburg.

Harrisburg, while trolling minnows with spinning tackle, lined with 6-pound test monofilament.

“On November 8 and 9, similar catches were made with ‘Big Bill’ Haubenschild taking one that tipped the scale at 6 pounds 1 ounce.”

Thus wrote John R. Matthews in answer to the ANGLER's request for details.

Fishin' Facts

What if fishing expenses were deductible?

The idea of such consideration would immeasurably lift the spirits of millions of Americans around April 15th. Although it's claimed that Allah doesn't deduct from the life span of man those hours spent in fishing, Uncle Sam fails to make similar allowances on the income tax form.

And that just doesn't seem quite right.

Ask any fisherman. He'll tell you that a quiet morning spent on his favorite stream is one of the most effective "cures" known to man. The sparkle of fresh dew on the grass, water gently lapping against the bank, and the electrifying yank as a lunker smashes a lure can heal more ailments than a whole array of pills and tonics. Yet, this natural therapy is not deductible.

The arguments against fishing deductions include the claim that it would give rise to a whole new con-

cept in "swindle sheets." Fortunately, this wouldn't occur. Anglers possess two built-in inhibitions which prevent padded accounts.

First, says The Mercury Outboard Motor Company, fishermen are honest. Sure, they may bamboozle a bass from an artificial minnow, or perhaps exaggerate a bit in telling of conquests . . . but no finer group exists.

Secondly, expense records are always subject to the close scrutiny of fishing "widows,"—those wives who won't accompany their husbands afield. A vague entry listing "entertainment" would probably start an investigation that would make treasury agents look like amateurs.

Yes sir, fishing deductions would be mighty nice. But they're not really needed. Besides, who wants to waste time figuring tax forms during April when the same amount of effort with a flyrod yields far greater returns?

ANGLER QUIZ

By Carsten Ahrens

Fish Parts

- | | |
|---------------------|--|
| — A. Nostrils | 1. Extension of the head to protect the gills. |
| — B. Scales | 2. Used only for smelling. |
| — C. Caudal Fin | 3. Separates food from water. |
| — D. Dorsal Fins | 4. Over-lapping armor. |
| — E. Ventral Fins | 5. The tail or caudal fin is the chief locomotive organ. |
| — F. Gill Cover | 6. Provides fish with oxygen. |
| — G. Gill Filaments | 7. A fish's most sensitive sense organ for detecting low frequency vibrations. |
| — H. Gill Rakers | 8. Helps fish in rising and sinking in the water. |
| — I. Swim Bladder | 9. Arranged singly . . . down the back. |
| — J. Lateral Line | 10. Always in pairs . . . lower part of fish. |

Answers on Page 24

A Fishing Bonus

by C. Robert Glover, Chief

Conservation Education Division
Pennsylvania Fish Commission

photos by Johnny Nicklas

An Alternative Sport for Early Season Trout Fishermen

Trout fishermen who spent their opening days on Lake Wallenpaupack in Pike and Wayne counties in Pennsylvania's northeast, and devoted them to trolling for large brown trout, which in early season respond strangely there to deep running lures and baits, were greeted on their 1958 excursion with a completely ice-covered lake.

Many learned of the condition beforehand and turned their efforts to other waters. But as the layer of ice seldom existed in earlier years on the mid-April trout season inaugural, others got the surprise—rather, the disappointment—when they arrived. Among these were a few who, in attempting to salvage their day on nearby streams, wound up on the ice-lined but open Wallenpaupack River which flows into the Lake from the south at Ledgedale.

Unknowingly, they joined a few natives of the



FRED "BUTCH" HERBST and the walleyes he settled for in the Wallenpaupack River at Ledgedale when opening day trout in 1958 proved uncooperative. (A hint; take a close look at his lure.)

area who were "on to" an early season occurrence there and in whose plan trout did not figure to any prominent degree. It was walleye in which these latter were interested—walleye in goodly number and size, that move into the lower reaches of the river along about that time each year to spawn.

The accompanying photographs tell the story. But it might be well to point out that this situation is not common only to the "Big Lake" and its feeder. A similar state of affairs occurs in the stream feeding Lake Carey in Wyoming County, and likely presents itself in other waters flowing into lakes populated by walleye.

Upon the liberalization of seasons on many of Pennsylvania's fishes a couple years ago, the opportunity to take walleye at this time of the year and under this circumstance became a new bonus for the angler alert to the possibilities.

Nor, according to fishery biologists, need there be any concern that taking them thusly will reflect adversely on the eventual walleye population in any given water area, as it is a most prolific spawner.

A spawning walleye will drop as many as 23 to 50 thousand eggs per pound of fish. Thus, a relatively few can perpetuate the species to a lake's capacity to raise them, if the spawn and early survival of fry is successful. If conditions conducive to such successes are not present, whether there are few or many spawners, they will have little, if any, bearing on the ultimate number of adult fish of any given year that will populate the lake.

So, if your favorite trout stream come April 15 or thereabouts is over-crowded, or if its trout fail to cooperate, take off for the nearest stream feeding into a lake populated by walleye. It could afford the best opening day you ever had.



THREE MORE satisfied "trout" fishermen. (above) Fred Rosencrans of Lords Valley. (top right) Al Kreiffki of Blooming Grove. (bottom right) Norman Focht of Honesdale.

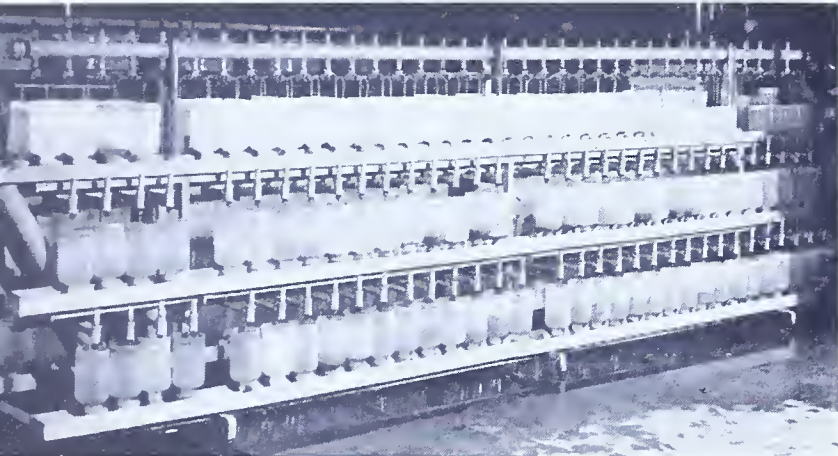


Bottled Trout

By KEEN BUSS

Fishery Biologist, Benner Spring Research Station,

Pennsylvania Fish Commission



THIS RESEARCH unit provides identical environments for research on the biology of fish from the egg to fingerling stages.

Not herring, anchovies, sardines, cod, nor mackerel. Not pickled, salted, smoked, dried, cooked, canned, frozen, nor packed in brine or oil. But bottled trout, and alive.

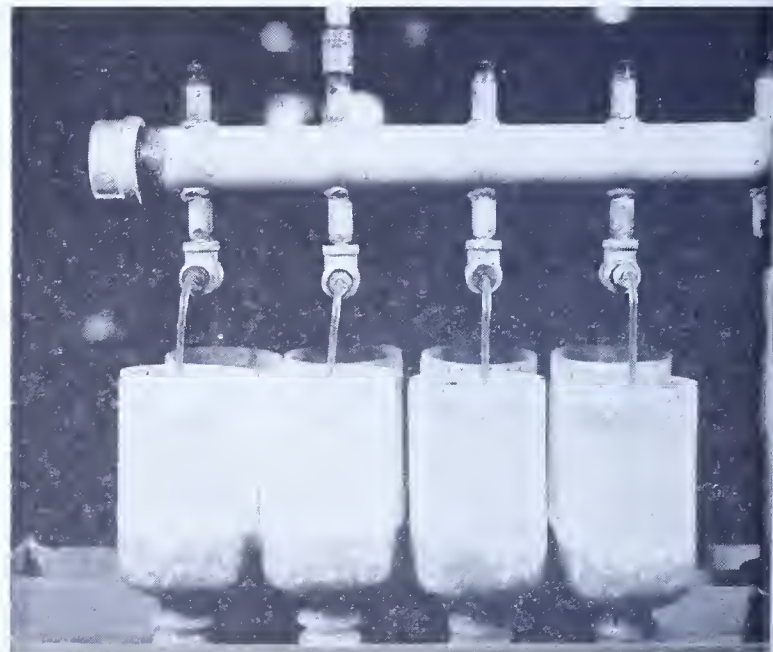
This is one of the newest research developments at Benner Spring. And most important to research is that these trout were not placed in the bottles as fry or fingerling, but as freshly spawned, fertilized eggs, which in due course incubated, hatched into sac fry and grew.

Here is an inside story of research, a phase of the over-all fishing picture which, though of extreme importance to fishermen, holds little in the way of glamour for some of them. Others of the fraternity, along with a segment in the field of research will ask, "why—why play around with something like this?" The more discerning among fishermen and scientists alike, however, will leap right to the heart of the matter and ask "how?"

The answer to "why" is this: to develop a method wherein many small, compact and identical environments would be provided to test and observe the eggs and offspring of individual brood fish in selective breeding experiments, in nutrition experiments, and for other studies.

The answer to "how" is more complex.

In the past, there was no known method short of an enormous hatchery building to house the many individual troughs needed to conduct experiments and studies on many individual lots of eggs. Quite often, in addition to space needs in research procedures, whether they be in chemistry, physics, biology or other sciences, the equally pressing problem is to find a method that will result in the most valid findings. Fortunately, no such complexities attend the analysis which follows, as most often these are fairly well established routines.



CLOSE UP of experimental eggs in polyethylene bottles.

Therefore, scientists must also be gadgeteers—Rube Goldbergs, as it were—to insure the success of their research. Thus, the bottling of trout eggs may rightfully be considered a "gadget" method developed to study the biology of brood fish, their eggs and progeny.

And this gadget evolved at Benner Spring is looked upon there as a most important development in their research efforts—as important in this field as was the development of canning and later freezing to the packing industry.

The gadget involved was suggested by the production method, also developed at Benner Spring, to incubate trout eggs in jars, as described in "Research Answers The Trout Egg Incubation Problem" in the March 1959 issue of THE ANGLER.

It seemed logical that if trout eggs would hatch in a six quart jar for production purposes, they would also hatch in a one quart jar using the same method of incubation, for research purposes. Thus, 32 ounce polyethylene bottles were used for the experiment.

The bottoms of the bottles were cut out, after which $\frac{1}{8}$ inch holes were drilled through a one-inch band around their lower portions. They were then inverted and screwed into their caps, which had already been fastened with screws, in the drainage channels of a battery rack. The rounded surface of the jars near the caps served to afford the desired water dispersion. $\frac{1}{8}$ inch I. D., rigid plastic tubes extending to within a half-inch of the bottoms of the inverted bottles supply about one pint of water a minute.

As was done in the production method of jar incubation, a layer of roofing gravel was placed around the water tube outlet in each jar and topped by a screen.

When the eggs hatch, the sac-fry remain in the polyethylene bottles until the resorption of the yolk sacs is completed and they become swimming fry. They cannot escape, as the $\frac{1}{8}$ " holes drilled earlier allow the water to pass out of the jar below the level of the open top.

As these jars are of small size they can be aligned like cans on a shelf and in three tiers, on each side of the common piped water supply. In a space usually required for one standard hatchery trough, which can only be divided into a few individual spaces with

identical environments, 202 bottles can now be placed. This means 202 individual tests, where heretofore only five or six were possible.

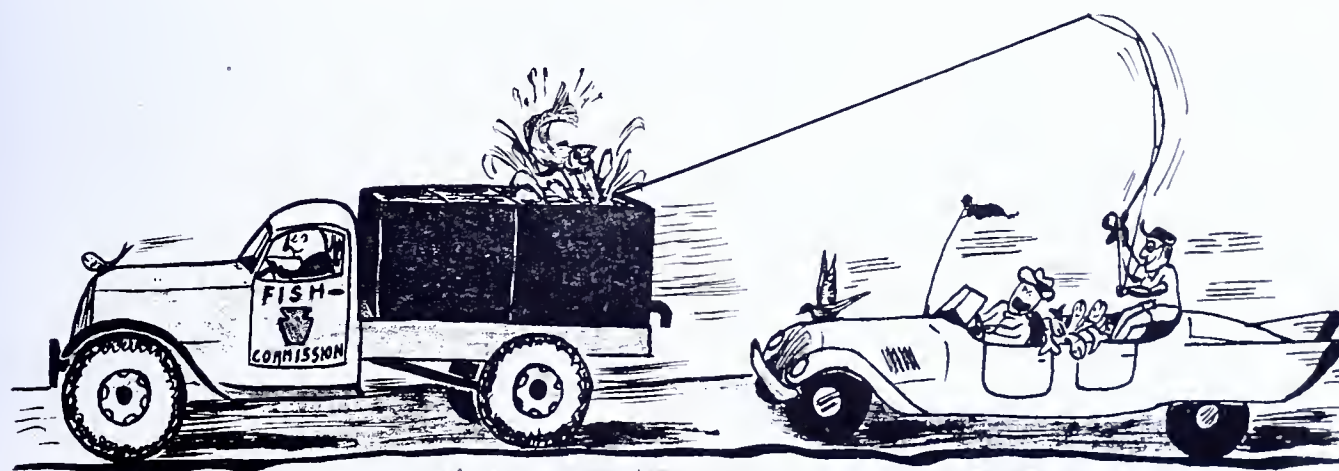
Such an array of bottles would suggest an extensive taste test. But this wouldn't answer any questions since the water used is treated with formaldehyde. This substance serves to prevent fungus from developing on those eggs and fry which die.

The extent of use to which this development can be put is only limited by the needs and the imagination of the researcher. It can be used to learn many things about the biology of fish eggs—trout eggs and even those of the warm water fishes.

It can be used to hold eggs for the Commission's selective breeding program. And the more lots of eggs from different fish that can be retained, the faster the program can be conducted. The bottles can be used to hold the eggs of fish which have been reared on different diets. The efficiency of a diet may be reflected in the viability or number which hatch and grow of eggs produced by fish on different diets.

Eggs from a mutant stock—those which possess characteristics at variance with the normal of a species—or from stock that has been exposed to radioactivity, can be held separately. Truly there is no end to the tests which may be conducted in these compact units.

To the satisfaction of the Benner Spring staff, this newly evolved "gadget" has proven practical, and feasible. Best of all, the bottles don't say "no deposit—non-returnable." They can be used again and again, year after year, to conduct the experiments that will accelerate gaining a fuller knowledge of fishery biology.



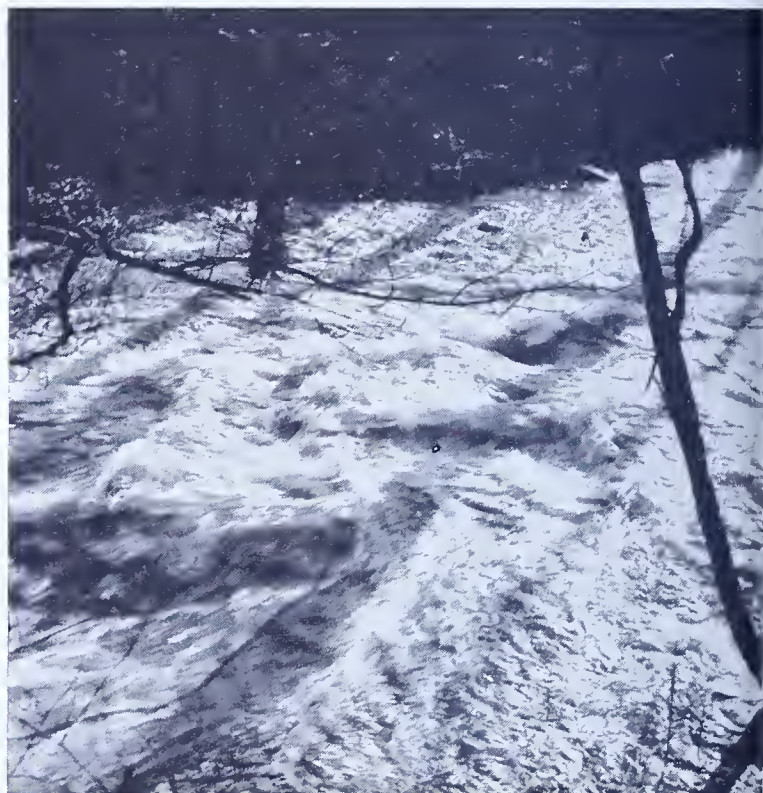
"Ambulance Chaser" Goes Fishing!

Spring vs Summer

By HEINZ ULRICH



HERE ARE two photos of the same trout stream taken from the same spot. Photo on the left was taken during late summer while photo below was taken during an early spring runoff.



From years of fishing I have come to the conclusion that trout fishing is really two separate and distinct sports—one is the very productive spring fishing while the other is the more subtle but less productive summer fishing. The methods used to catch fish are so different at these different times of the year that you sometimes wonder if the only similarity is that the object of both is to catch trout.

For me spring trout fishing lasts until the big May hatches of insects break out over the country and although this is a very short season it is the season of the most productive trout fishing. It is the time of year for live bait fishermen using worms or other live baits. It is the time of year for the beginner to start trout fishing for at this time anyone using a few of the basic fishing fundamentals can do almost as well as the year round expert.

First, start by using only natural baits. It is true that experts use flies even on opening day and make them pay off, but what they do is to use buck tails or streamers. From years of practice they have learned to duplicate the motion of small fish with these lures thus making them productive. Unless you are an expert, live bait will be the most productive. Worms are especially good baits early in the season. At this time streams are high and the ground is wet thus driving worms near the surface of the ground and time and time again they are washed into the drink and quickly

get gobbled up by trout and other fish. During a wet spring all trout at one time or another get a taste of worms so they are constantly on the lookout for one of these meaty tidbits. A small worm, one with plenty of wiggle is about the best bait available for spring fishing. When going after the big ones don't make the mistake of thinking a big worm for a big fish it just doesn't work that way. What makes a trout strike hard at a worm is its alluring wiggle and the more a worm wiggles, the more apt it is to attract some big trout's attention. Two small lively worms on a hook are far superior than using a large night crawler.

One of the fundamental differences of early and late season fishing is that in spring fishing you mostly fish blind and seldom see the fish but must through knowledge of fishing know where they are. During the summer the water is low and the fish must often be stalked by the angler, whereas when the water is turbulent

it gives an angler an advantage in that the fish cannot see him. A fisherman can venture closer to where trout are in the spring than he would dare venture in the summer when even the slightest ripple sends trout scurrying under rocks for protection. One important danger to look out for is not to let your shadow act as your calling card because a moving shadow will empty a hole faster than anything I know. When the water is high trout generally keep out of the main current because rushing water tires them out. They will generally hide behind rocks, in deep holes, or under protected banks—look for them in these places.

If fishing a live "Killie," which is so deadly against three and four pound brown trout, fish it in deep running pools and like any other live bait let it advertise itself. Fish the front of the pool, the back of the pool and in and around any whirlpools that may be there. Remember trout collect around these points waiting to pounce on any food.

Canned Salmon eggs which can be bought in most tackle shops or tapioca balls which closely resemble fish eggs are a popular springtime bait. Fish them on a weighted leader (a Piece of shot) so that they run deep and along the bottom. No trout, Brookie, Brown or Rainbow can resist some eggs if presented to them in an enticing manner. Many fishermen swear by salmon eggs, claiming that they produce by far, the most strikes—at any rate they are always worth a try.

For early season fishing when using live baits I prefer to use a glass fly rod. Glass seems to have a softer motion than bamboo and this comes in very handy when casting for it is less likely to whip the bait off the hook. Spring is also the time of year the boys with spinning outfits do alright for themselves because



LET'S GO over to the poison ivy patch and do a few jumps.

they can flip lightly weighted baits great distances.

Another advantage of Spring fishing is that a trout gives you twice the fight of one caught later in the season. Hook a two pound Brookie in April and you have a roaring fighting battle. Catch that same fish in August and what happens? and he does a few jumps and comes to net dog tired from the warm water. Trout act just the way we humans do, in the summer heat they seem to like to roll over and rest till it cools off.

Me, I like my trout fishing best in the beginning of the year and I don't much care where I get it either whether its the Loyalsock Creek, Stoncy Creek, Fishing Creek or any other stream along the states 4,000 miles of trout streams; just as long as the water is cold and the trout are vigorous and hungry I'll have myself some of the best sport in the world.

FISH WARDENS SAVE TRUCKER'S LIFE

Prompt and proper action by fish wardens Stephen Shabbick and LeRoy Noll of the Wyoming and Lackawanna counties districts saved the life of Lyle Duckett, Elmira Heights New York truck driver, who was overcome in the cab of his truck by carbon monoxide gas as it was parked near Factoryville in mid-January.

The two wardens while on joint patrol stopped for lunch at a diner on the intersection of Routes 6 and 107, and were told of a driver asleep in his cab since 10 o'clock the previous night, with his truck motor

running all the while.

They investigated immediately and finding the man unconscious and barely breathing removed him, then took turns applying artificial respiration. Meanwhile, they directed that the ambulance of the Factoryville Fire Company be summoned.

Upon its arrival, oxygen was administered and the driver taken to the hospital, where though his condition upon admission was listed as critical, he subsequently recovered.

What Makes A Fisherman

By RAY OVINGTON

The trout fisherman's year begins in April when more than twenty-five million attach themselves to the end of a line and lure in search of the pleasures of angling. To attempt rationalization or put into cold hard words just what makes a fisherman is like trying to catch flying bees with a salmon net. There are just too many loopholes in him and his sport or obsession, call it what you will, to be pin-pointed on a statistical sheet.

The strange thing about the fisherman the real dyed in the wool angler is that when he seriously tackles his fishing with pointer dog tenacity, he applies his mind and body more thoroughly to basic fundamentals than he ever does off the stream. His true approach to life itself, as he would like to pursue it is summed up in his actions, for he is out to enjoy the frustration involved in solving a mystery. Unhampered by directions from others, he is a free man to go his way, make his own decisions.

He is thoroughly content every minute of the fishing despite the barrage of mosquitoes or black flies that descend unmercifully at twilight. He'll stand hip-deep in icy water, shaking so violently that he can scarcely cast, or he'll par-boil in waders on a hot summer's day. He'll hike miles into the woods; he'll drive at hazardous speeds to his trout stream, eat indigestible roadside meals, sometimes from his own camp stove. He'll stay at his hard toil all day, from dawn till midnight, and come straggling into camp wet, tired, cold . . . and often fishless.

He'll growl in tones disagreeable of what a wonderful time he has had and immediately launch into a story, complete with the gestures, about the big one that got away. And he'll be right back in there on the morrow, after spending a sleepless night devising strategy that he is sure will succeed in putting that monster in his creel.

Fishermen are not a group of people, nor any section of society. They cannot be buttonholed in terms of the media man's yardstick. You can't talk about the fisherman as a market and how best to reach him, nor can he be determined by income group. Using the slide rule in an effort to find out what makes the fisherman tick is wasted effort. You can't classify him by character nor can you nail him by any of the terms used by psychiatrists. You may argue that he must be a nature lover, one who has a deep understanding of the out-of-doors and who, if the choice were to be made, would rather fish than play golf or bridge or build furniture in his basement. Yet there are fishermen who also do these things.

You can't call him a man who is competitive minded, yet there are fishermen who travel the globe to break world's records and who will struggle in a fighting chair until some monster of the deep has succumbed. There are just as many anglers who care little whether they catch fish or not; they simply enjoy fishing. They are happy of course to get a rise and feel the strike and will play the adversary, enjoying every last wriggle.

There is the technically minded type who spends the winter hours tying flies to imitate natural insects that have been preserved in bottles since last season. This type is apt to measure his leaders with a micrometer and carry a host of scientific gadgets with him on the stream. To him all these things mean fishing pleasure. Nor can this activity be paralleled with anything else in the manner of so called recreation. Fishing and golf are at almost opposite ends of the spectrum. Most everything in golf is tangible; the clubs, the ball, the tee, the fairway distances, the bunkers, the green and the cup. In fishing any given area of a stream is never the same twice. What succeeds now might be useless three casts from now. The fly that will take trout tonight may fail dismally tomorrow, despite equal barometric pressures, temperatures, wind, light and what-all else.

Perhaps it is the unaccountable elements that make a fisherman. Perhaps it is those intangibles of chance that offer relief from the conventional, the legitimate, the orthodox, the regimentation of what we choose to call modern civilization. Perhaps, acknowledging these things he tries vainly with all his senses to probe the mystery of the current in search of an answer which he knows, in his more pedantic moments is impossible to find. Perhaps he is like the little child who tries to reach the end of the rainbow for that elusive pot of gold, but has infinite and unexplainable delight in so doing.

This searching is not limited to his hours of active fishing. The true fisherman enjoys his fishing throughout the year, in both retrospect and anticipation. Every waking hour there is in his subconscious and sometimes conscious mind thoughts of fishing. Then during the weeks before the season opens, he isn't much good to anyone. He spends hours arranging the dry flies, nymphs and leaders in their individual boxes. He lives in a dream world, wondering how he can exist until the long awaited day arrives. Yes, there is something strange about this siren like allure, this bug which strikes at the most vital areas of a man's heart to hypnotize him into actions that passeth all understanding.

Little Boats For Big Fish

Small boats frequently open the door to man-sized fishing.

They provide the "entree" to streams too deep for wading, and furnish a convenient way to fish those small lakes frequently neglected by most anglers. These little boats have been pushed into the background by big pleasure craft, but they still play an important role on the fishing scene.

Unless your biceps are big and your back broad, we suggest that you limit cartoppers to boats weighing less than 120 pounds. Wood and fiberglass construction seldom meet this weight requirement, so confine your small boat choice to sturdy aluminum or a strip-canvas combination.

Canoes are natural cartoppers. Light and extremely portable, they represent one of the finest craft available for fishing rivers or small lakes. Aluminum canoes are especially light, won't soak up additional

aquatic pounds, and can take a beating. Square-sterned models powered with small outboards make it almost unnecessary to pick up a paddle.

Small skiffs are handy also. They're stable in calm waters, and offer more freedom of movement by boat occupants. But, they can't compete with the canoe for shooting river rapids or busting through whitecaps on a wind-ruffled lake.

Select your car-top boat with an eye toward the type of waters you'll be fishing most often.

Portability is the main feature of a car-top boat. You can load it on a ten-dollar car-top platform, and can take it wherever you can drive a car. With one of these lightweight craft, you can seek out the lonely fishing waters bypassed by less adventurous anglers, and discover a lot of fishing action in the process.

BY OUTDOORS, INC., Columbia, Mo.

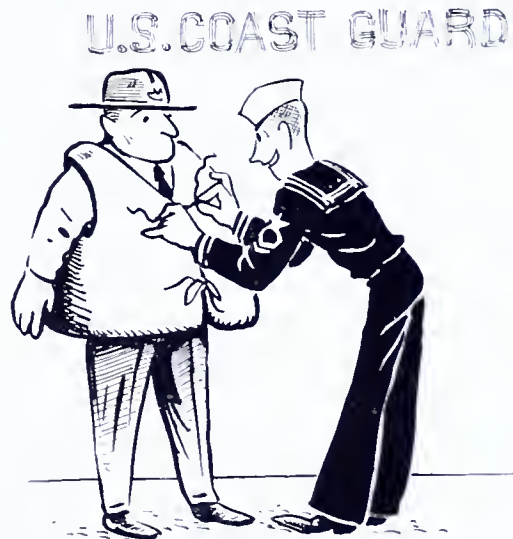
Notes From The Streams



The Future Looks Brighter

The recent technical training class conducted for fish wardens was the finest schooling I ever received since becoming a warden. The coordination of the various branches or divisions of the Fish Commission with the law enforcement division certainly provides excellent opportunities for co-operation. I was especially impressed with the information we received on the subject of biology. I'm sure that these technical sessions will prepare us to be better able to solve the many problems coming before the divisions of the Commission.

—Joseph E. Bartley, Warden
Pike County



U. S. Coast Guard Cooperation

A splendid opportunity was afforded recently to Fish Commission personnel of the northwest division in a visit to the United States Coast Guard Headquarters in Erie. Here the men were instructed in methods involving rescue work, operation of power driven boats, life saving devices, safety signals, storm warnings, and use of many kinds of equipment. This experience made us all appreciative of the fact that our government maintains such a worthwhile organization.

—Kenneth G. Corey, Warden
Warren County



CONSERVATION ACROSS THE NATION

Golf Courses and Fishing Lakes

Figures assembled by the National Golf Foundation, the Gallup Poll and the U. S. Fish & Wildlife Service disclosed the following:

One acre of golf course requiring a capital investment of \$2,470 supports 125 golfer days of sport per year.

One acre of fishing lake requiring a similar capital investment supports 189 angler days of sport per year.

In this regard, fishing waters appear to be an over-looked bargain for municipalities seeking economical means of providing mass outdoor recreational facilities.

Sport Fishing Institute Bulletin.

Planning for Access

The New Hampshire Fish & Game Department, recognizing the need to assure public access to the waters of the state for recreational purposes, has asked for and received the help of the state's council on resources and development. The council consists of 7 sister agencies. In early studies it was found that only 192 of 650 ponds over 10 acres in New Hampshire had public access.

Reservoir Access Assured

As a result of studies and subsequent recommendations by the North Carolina Wildlife Resources Commission and the U. S. Fish & Wildlife Service on the proposed 33,000 acre Cowan's Ford Reservoir on the Catawba River, it has been required that downstream fishery resources be protected by minimum flows. In addition, 10 fishing access areas with 100 acres of parking space are also required.

New Jersey Protects Hawks and Owls

Gov. Robert B. Meyner, on Jan. 12, signed into law a bill which protects all species of hawks and owls in New Jersey throughout the year. The measure removes from the unprotected list of birds the sharp-shinned hawk, cooper's hawk, goshawk and great horned owl. The bill was sponsored by the New Jersey Farm Bureau, the State Grange and the New Jersey Poultrymen's Association and several conservation groups.

Answers to ANGLER QUIZ

2	A	1	F
4	B	6	G
5	C	3	H
9	D	8	I
10	E	7	J

Insecticide Research

The "Wall Street Journal" reported that two chemical companies are working on microbial insecticides. Tests on 53 crops seem to indicate that some insects may be controllable using certain bacillus spores, without harm to bees, winged insects, animals and fish.

Another hopeful development was cited in the magazine "Farm Chemicals." A promising inert dust is being studied. The material is a very fine white powder—a treated silica aerogel—which has shown success in some tests on roaches, termites, house flies, mosquitoes, ants, fleas, and other insects, apparently without harmful effect on animals. It works by absorbing the waxy coating which protects insects from death by drying.

Lake Reclamation In Minnesota

During 1958 Minnesota fishery workers reclaimed 787 acres of potential trout habitat. A total of 17 small lakes ranging in size from 5½ to 200 acres were treated with fish toxicants to remove competing fishes prior to re-stocking with trout. This brings the total of reclaimed trout lakes in Minnesota to 42.

Sport Fishing Institute Bulletin.

Outstanding Progress on Clean Streams

The 1958 summary of the Ohio River Valley Water Sanitation Commission reports outstanding progress on the "Inter-state Crusade For Clean Streams." The states involved are Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, Virginia and West Virginia. Sewage treatment facilities are now operating or under construction to serve 92% of the sewered population. Ten years ago it was less than one per cent. Also, 7 out of 10 industries along the Ohio river are now complying at least with minimum requirements. Ten years ago less than 3 out of 10 were in this category.

Plan 25,000 Acre Lake for Public Recreation

Southern Illinois sportsmen received a bonus last fall when "no hunting" signs were replaced by "welcome" signs on 1511 acres of land owned by the Pioneer Rend Lake Conservancy District. Founded in 1954 by a citizens group to advance the agricultural, industrial and civic welfare of southern Illinois and to aid in conservation, recreation and flood control, the district acquired the land in anticipation of gaining federal and state support for building the proposed 25,000 acre Rend Lake. Adaptable portions of the proposed lake and environs would be dedicated to fish and wildlife purposes. It is believed that the value of the recreational opportunities so created would exceed \$1 million annually.

Wildlife Management Institute.

The Creed of a Sportsman

The good sportsman portrays the noblest human characteristics: fair play, generosity, and humbleness. These are rich heritages of the human race that few possess and many fail to understand. These qualities are born in the child and may be fanned into a flame, or suppressed through ignorance and neglect. When sportsmanship is stifled the individual becomes selfish, decrepit, and despicable; but when it is encouraged the man stands out as an honest soul, clothed in modesty, trusted by his fellowmen and idealized by those who know him. Such a soul plays the game, follows the rule, bows his head in shame for the culprit who would only win and never lose. The sportsman lives each day so that he may look back on the past as a paradise from which nothing need be subtracted.

—I. E. Milhus



GILBERT THE GUIDE

REMEMBER, THE PURCHASE
OF A FISHING LICENSE DOESN'T
GIVE YOU THE RIGHT TO
TRESPASS ON PRIVATE LAND!

READ & HEED ALL TRESPASS
SIGNS AND SPECIAL RULES &
REGULATIONS.

**NOTICE:
NO
FISHING**

SIGNED: J. Doe

**KEEP
OUT**

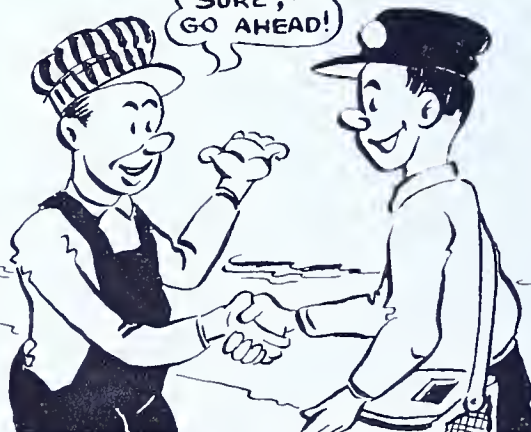
**NO
FISHING
6 P.M.
TO
8 A.M.**

**KEEP
IT**

IN MANY CASES YOU CAN
FISH POSTED WATER... BUT
FIRST YOU MUST GET
THE OWNERS PERMISSION!

YOU'D BE SURPRISED
HOW A LITTLE COURTESY
AND RESPECT OPENS
MANY OF THOSE LOCKED
DOORS AND GATES!

SURE,
GO AHEAD!



JOHN F. GARK—O

May 1959

P 38.31

1.6



PENNSYLVANIA

Angler

Thirty Months--Thirty Years

To A Better Outdoor Pennsylvania

For the next thirty months a new, and temporary, federal commission will be studying a subject of vital interest to the lovers of outdoor recreation of Pennsylvania and the rest of the nation.

This is the national Outdoor Recreational Resources Review Commission, of which Laurance Rockefeller of New York, is chairman, and of which Representative John P. Saylor of Johnstown, is the only Pennsylvania member; indeed, he is the only congressional member from the eastern states.

The commission has a three-pronged task: 1) To produce an inventory of today's existing recreational opportunity for the public, 2) make a forecast of the expansion required to meet the demands of the foreseeable future, and 3) suggest ways and means by which these demands may be met.

Late in April, 1959, the subject had a thorough going-over at the 37th national convention of the Izaak Walton League of America, held in Philadelphia. Chairman Rockefeller was the keynote speaker. J. W. Penfold of Washington, conservation director of the League and the "daddy" of the resources review idea, was another speaker. So was the writer of this editorial, who talked on the subject of the landowner's stake in outdoor recreation.

Does the average landowner truly realize the stake he has in outdoor recreation? If he did so realize, would he continue the damaging land and water use practices that are still so common in this Commonwealth and elsewhere across this broad land? Would he continue to plow every field right up to the fence, and up and down hill instead of on true contours to prevent erosion? Would he continue to harvest for cash gain, or destroy as he so frequently does, every last bit of winter food and cover for wildlife left on his cultivated acres after he harvests his normal crop? Would he continue to be so indiscriminate in his use of highly potent pesticides?

These and other bad practices seem to relate to wildlife rather than fish, but the fish are affected, too, though perhaps in a more indirect or subtle way in some instances.

If it is granted that the bad practices are still being carried out by landowners, even after a full generation of recognition that they are bad, isn't it proof that someone has failed to "sell" the landowner on his stake in good outdoor recreation? Maybe all the people in the organized recreational resource con-

servation movement need to re-examine what they are thinking and doing, to see if the process of bringing about more widespread recognition can't be speeded up, for this obviously will have to be done if the demands of the coming years are to be met.

There no doubt will be a tendency now to "pass the buck" to the new Outdoor Recreational Resources Review Commission. If so, it will be one of the worst mistakes the recreationists can make. Through its work the commission can help—it cannot help but help—but the organized conservationists would be foolish to sit with folded hands now and wait for the commission, through its study, to find the answers to all outdoor recreational problems. Organized conservationists, in the Izaak Walton League and every other group, would do well to keep plugging away, building their strength and their knowledge of what must be done and how to do it, so that when the commission delivers its report thirty months from now, they will be reasonably ready to undertake their share of the task and bring it to successful accomplishment.

The stake of the landowner is, in a broad sense, no different from that of the nonowner in outdoor recreation. The chief difference is that, in many ways, he is in a position to take direct action and do something about improving and perpetuating the recreation that, ordinarily, should be available to him and his neighbors and friends right outside his door. His stake is obvious to the informed member of the major recreational resource conservation organizations, to those who come to meetings and sit through long discussions and debates in smoke-filled meeting rooms once a month. But what about those millions of landowners, in Pennsylvania and elsewhere in the United States, who do not belong to those organizations, who can't always be talked with face to face, who do not know or who aren't aware of their stake in outdoor recreation? These are the people who must be reached; these are the ones toward whom present and future attention must be directed. And it will take not only in the thirty months of the life of the national Outdoor Recreational Resources Review Commission, but probably the thirty years that follow. Conservationists must prepare for a long, hard, continuing pull, if the goal is to be attained.



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Photo by Johnny Nicklas

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Poison Ivy

A Lurking Menace to Millions

by Wilbert Nathan Savage

A prominent doctor-columnist has conservatively estimated that more than 33% of all people in the United States are readily susceptible to the irritating influences of poison ivy. Others may contract the evil rash if exposure is thorough enough and conditions are unusually favorable. This means that perhaps 70,000,000 Americans are wholly lacking in the powers of immunity which could ward off an active outbreak of the blushing "itch."



TYPICAL EXAMPLE of poison ivy climbing tree trunk.

Some authorities on the subject claim no one is really immune to the pernicious plant, explaining that our bodies undergo changes and resistance varies from time to time as we grow older. This conclusion is



GOOD EXAMPLE of poison ivy growing on fence.

substantiated by the U. S. Department of Agriculture's plant-study experts, based on findings of the United States Public Health Service.

There are records of people who found poison ivy harmless to them for years, only to suddenly discover after moderate exposure that they had contracted a serious case of the annoying rash. In one particular instance, a state park attendant who had "toiled with the stuff for twenty years" woke up one morning to find that he had what his doctor later described as "the worst case of ivy poisoning that anyone could possibly have without benefit of hospitalization . . ."

Sometimes, when people tormented by poison ivy have fun poked at them, just as jokes are often thoughtlessly made about hay-fever sufferers, it is largely because the uncomfortable condition is the result of carelessness. Frequently the amused ones even offer the reminder: "Leaflets three, let it be! Come, now, we know you can count to three!"

Seriously, like hay fever or bee stings or insect bites, there's nothing about poison ivy's potency to justify even a small degree of genuine mirth. It's serious business, and something to watch out for—

whether you're picnicking with the family, camping, hiking, fishing, riding, hunting, or just strolling leisurely in a favorite woodland retreat. You might even strike up acquaintance with the stuff in the fringes of Grandma's flower garden or alongside Uncle Homer's new hunting lodge. Learning to know the plant as well as a farm boy knows thistle bloom is the only sure way to stay clear of the wicked trio of leaves.

Since poison ivy may be found from Michigan to Florida, and from New Jersey to Texas, it is a wise plan to always form the habit of being on guard against possible contact with the unpopular bit of flora. The U. S. Department of Agriculture, recognizing that poison ivy is a real menace to the well-being of the country's inhabitants, went to the length of preparing a bulletin which gives advice on identification and eradication. Here's a selected part of the helps on identification:

"Every year sees many adults, and especially children, accidentally poisoned from contact with plants that they did not know were harmful. Had the sufferers known how to detect poisonous plants—especially poison ivy, which may be common poison ivy, or the near relatives, oakleaf poison ivy, and western poison oak—they could have avoided them and escaped the painful experience of severe skin inflammation and water blisters.

"The leaves of all forms of poison ivy have stout, rather long stalks, bearing three leaflets, two of which are opposite and short-stalked, while the end leaflet is long-stalked. The leaflets vary from one to four inches in length and when mature are dark green on the upper surface, lighter underneath, sometimes bearing a velvety sheen. The crinkly young leaves are red when they first unfold in the spring, becoming green with the advance of mild weather, and turning in autumn to beautiful shades of scarlet and deep-orange . . .

"Small, five-petaled, yellowish green flowers appear in early summer in clusters one to three inches long, growing out of the angles between the leafstalk and the plant stem, or above scars along the sides of the branches. They are followed by small, roundish, smooth, green berries about one-fourth inch in diameter, which becomes white or ivory-colored as they ripen. The fruits carry a full quota of poison, look somewhat like waxy currants, and are divided by distinct outer lines resembling segments of a peeled orange.

"The vines of poison ivy spread underground by rootstocks, sending up an abundant, shrubby growth, the branches tending to ascend any convenient support, such as trees, old stone walls, telephone poles, fences, etc.



FLOWERS of the poison ivy vine.

"When growing as an erect bush or trailing shrub, poison ivy attains a height varying from a few inches to about three feet. The oakleaf variety is usually a squat, stemmy growth, but it also is a climber . . ."

Some people, who apparently are partially immune to the plant and strangely blind to its harmful habits, have it vining around homes and summer cottages. Little wonder, indeed, that many innocent children and unsuspecting adults—guests oftentimes!—have spent sleepless nights scratching and rubbing—acts which only tend to spread the malady and intensify the discomfort wrought by those harmless-looking leafy vines.

As if in league with evil forces in the plant world, poison ivy sometimes wears leaves that are deformed, but if you look closely you'll see the cleverly hidden resemblances to normal ivy leaves. The end leaf, rather than the opposite-each-other pair, is the one that usually leads the attempt to masquerade as an

FRUIT of the poison ivy vine.



innocent bit of vegetation. The outer edges of the leaves in any case may be sharply serrated, or have even margins. Oakleaf poison ivy has leaves a good deal like those of the respected oak tree; but the three-leaf arrangement exposes the true identity of the verdant culprit.

I have observed poison ivy growing in plots set aside and equipped for public recreation; on school playground boundaries; beside swimming pools; and in scenic picnic areas. Certainly state and county officials in charge of such areas would be rendering great public service if they would read USDA's Bulletin #1972 and encourage steps to ward application of the listed eradication methods.

Poison ivy—and this may amaze you!—is virtually as deadly during winter as it is in summer, spring, or autumn. A dry tendril, a shriveled berry, a frozen piece of vine, a fragment of root—any of these possess power to transmit the poison factor, which is an oily, non-volatile substance called urushiol. It flows in the sap, pervades every part of the plant, and even when dehydrated maintains most of its potency.

Even smoke from burning poison ivy vines carries particles able to institute a vicious case of the dreaded



TYPICAL GROWTH of poison ivy on shade tree.

only to discover next day (symptoms usually appear within twenty-four hours) that it struck a final blow of victory to prove how nasty it habitually can be.

One of the first plants to become green in the spring, poison ivy is often confused with the harmless Virginia creeper, but there's no reason for this error since the Virginia creeper has five leaves in each group or set; poison ivy invariably has three. When the ivy vine climbs tall objects, such as tree trunks, it becomes a parasite and puts out tiny aerial rootlets; and these work their way into small openings and crevices. So many of these rootlets may be present that the vine takes on the appearance of a fuzzy black or brown rope. This is a good hint for quick identification.

Poison ivy can be more than a nuisance. Earliest symptoms call for prompt treatment. There are cases on record where poison ivy actually caused blindness, usually because of accompanying untreated infection. Some individuals become violently ill as a result of ivy poisoning, develop hives, and become swollen and numb.

One should be careful not to permit pets to run free where poison ivy is present, for the fur on a dog is a perfect carrier for the poison-bearing oils. Tools, clothing, and other objects may also carry the poison particles. Birds may "plant" the vine right in your own back yard or garden, so check periodically for infant growths of the plant. The Department of Agriculture can supply short-cut methods to effect total



POISON IVY showing abnormal leaf formation.

rash. Indeed, some people fear smoke from burning ivy vines more than they do contact with the live vines themselves! So, watch out for campfire dangers of this nature. You may put cleared-away poison ivy vines on a fire with a long-handled fork, all the while gloating over being able to destroy the wretched stuff,

eradication through use of chemical herbicides.

Returning to the matter of identification, I like the plan of one father who early taught each of his five children to accurately identify poison ivy. He did this by making a game of it, sometimes by use of drawings, sometimes actual photos and even cut-outs originated by the girls. The drawings were colored, even to details of the vine's flowers and fruit. The pay-off emerged in the fact that through outing after outing in areas where poison ivy was a widespread menace, not one of his youngsters was ever fooled by the nasty bit of vegetation.

In any event, learning to recognize the plant is a must for those who enjoy the out of doors. Whether you are motoring out for a good old pitched-tent weekend with the family, or going into the wilds to rough it for a week with the boys who brought back magnetic tales about far places and the "big ones" who haven't yet discovered the art of getting away.

One motorist I know, averaging eight thousand miles of vacation and weekend recreation travel with his family every summer, summed things up pretty well recently when he said, "We've learned to be as alert

to the dangers of poison ivy as we are to snakes and bees' nests . . ."

You're probably wondering what to do if at some time you aren't successful in avoiding poison ivy. Washing with strong laundry soap and water within a few minutes after contact may ease the effects, but soap and water isn't always available.

It is impractical to list all the pallatives and remedies that have been advanced for ivy poisoning. Some popular "drug store" treatments are considered reliable; others are of doubtful value, and at best self-treatment always involves the danger that ivy poisoning symptoms may be confused with those of other conditions and harm may be done by improper treatment.

Most people react favorably to a treatment of calamine lotion with an addition of two per cent of phenol, but frequent applications are necessary. Actually, the best thing you can do is to see your physician when symptoms first appear. Better still, master the skill of sure-fire identification, and always remember the old adage, "Leaflets three, let it be!"

Tioga County

Boys

Help Put 'Em In!

The five young men in the photo are all Liberty, Pa. High School students who assisted Tioga County Fish Warden, Leland E. Cloos stock Black creek with trout. The stocking occurred last March 5, and was accomplished in fine style.



IN THE PHOTO kneeling from left to right are Lyle Brion and Bob Alexander. Standing, left to right: Dick Black, Bill Dinnison, Tom Brion and Jim Black.



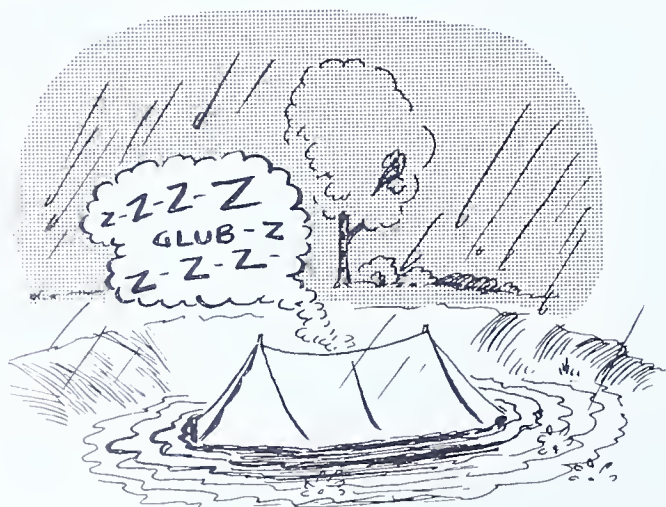
ANYONE FOR CAMPING



by John F. Clark

PART I OF A SERIES

The camper awoke with the realization that everything was not as it should be. When he had turned in last night heavy black clouds were closing in on the valley. And once during the night he had been half awakened by the distant rumble of thunder followed by a pattering of rain on the taut canvas of his tent. Now he was wide awake and feeling very uncomfortable for some reason or other. What the heck's wrong here? After switching on his flashlight it didn't take



long to find the cause of his misery. You guessed it, he was lying in a couple of inches of water. Oh well, as long as he's awake he might as well get up and start breakfast. Lucky thing he cut plenty of firewood yesterday, with a big roaring fire his spirits will be thawed out in no time. But doggone it, the wood he stored in the tent is just as wet as he is, and it would take a blow torch to dry it out. Well shucks, a cold breakfast is better than nothing. Now where's that food sack? . . . Food Sack! Yep, there it is, lying right there on the ground where he left it. Course

there's not much left after the "coons," skunks and the rain have had their inning.

Right about here, most would-be campers would choose one of two courses; they would either toss their gear in the back of the car and head for home, never to darken the forest doorstep again or, they would become better campers because of these horrible experiences.

Almost everyone, at one time or other, has had the desire to take to the woods for a couple of days or weeks or even months and really rough it. Know what I mean? Eventually everyone has a go at it, and they either enjoy themselves or they have a miserable time, like the character at the beginning of this yarn.

Every camping trip, whether it be a night spent in the back yard or a two week trek through a wilderness area, requires careful and minute planning. At this point the average beginner can only see the good times ahead and therefore he plans only for ideal conditions. Common sense dictates that you plan for the worst and hope for the best. In other words, it's best to have that bit of extra gear and not need it than to need it and not have it.

Every camping trip should be planned with the aid of a check list. Why? Well, for example: Have you ever gone on a campout where you brought everything in the way of food, but when it came time to cook the bacon and eggs you remember that you left the frying pan on the kitchen cabinet? The use of a checklist will prevent this.

Checklists can cover anything from a half a page to three or four pages. Checklists are strictly an individual proposition, and as you gain experience as a camper you will find that you'll be adding items or



eliminating unnecessary pieces of equipment. To give you some idea what goes into a checklist, here's the one we use on practically all our camping trips:


- Time of year—winter, summer, spring or fall?
- Probable weather conditions?
- Where—roadside camping area or wilderness area?
- Transportation—By car or will there be a considerable amount of back packing involved?
- How many are going?
- Shelter—tents or under the stars?
- Clothing and bedding?
- Food—how much and what kind?
- First aid equipment?
- General gear?
- Water?
- Permission to camp?
- How long will you camp?

These, of course, are only the main headings and each will require a separate checklist of its own. To give you an idea of what's involved, let's plan a typical campout.

- Time of year—Mid summer
- Probable weather—radio and newspapers report fair and warm with scattered showers throughout the area.
- Where—Moose Pond, five miles from home.
- Transportation—By car to Moose Pond trail and hike one mile.
- How many—Dick, Joe, Sam and myself.
- Shelter—For four people—two pup tents with ropes, stakes and poles (We could have eliminated stakes and poles but the land owner told us not to cut any green wood at the campsite). Waterproof ground cloth for each tent. Tarp to cover the cooking area in case of rain. Shovel for ditching the tents and for digging garbage pit and latrine. (Army surplus entrenching tool is excellent for this purpose.)

Clothing and Bedding—Raincoat, extra pair of socks. Change of underwear. Handkerchiefs. Moccasins or slippers for wearing in the tents and around camp. Light jacket or sweater. Summer sleeping bag or at least three blankets. (If it rains it might turn cold.) Will Wear—Cap, tee shirt and shorts, sports shirt, trousers, light wool socks over a pair of cotton socks, hiking boots (well "broken in," don't try it with new ones).

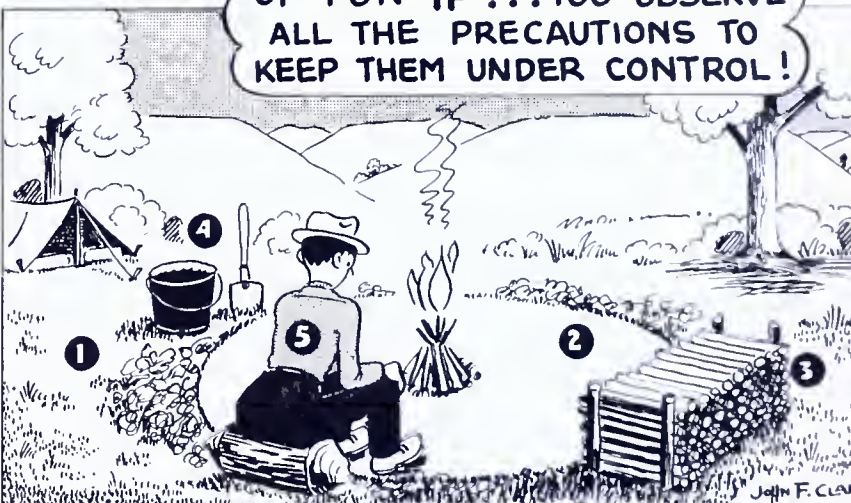
Food—Saturday Supper: baked potatoes, soup (dehydrated), bread and butter, instant coffee (Don't forget sugar and dry milk). Sunday Breakfast: pancakes and bacon with syrup, toast and butter, dried apricots, instant coffee. Sunday Dinner: soup, bread and butter, fish (If we catch any). Candy bar for dessert. Since we will be carrying all our gear part of the way we'll cut down on weight by using dehydrated and dry foods as much as possible. Now that we have the amounts of food figured out we'll need something to cook it in. This is taken care of very easily because each camper has his own cooking kit. However, we will need a pancake turner, salt and pepper, small amount of flour in a paper bag for flouring the fish (if any), matches (in a waterproof container), soap pads for washing dishes,



GILBERT THE GUIDE

SAYS:

CAMPFIRES ARE A LOT OF FUN IF ...YOU OBSERVE ALL THE PRECAUTIONS TO KEEP THEM UNDER CONTROL!



1 YOUR FIRE SITE SHOULD BE IN A CLEARING AWAY FROM OVERHANGING BRANCHES...

2 MARK OFF A CIRCLE AND SCRAPE AWAY EVERYTHING THAT WILL BURN. THEN DIG A SHALLOW PIT IN THE CENTER FOR THE FIRE....

3 STACK FIREWOOD OUTSIDE OF CIRCLE

4 BEFORE YOU START YOUR FIRE BE CERTAIN YOU HAVE SOMETHING ON HAND TO PUT IT OUT

5 NEVER LEAVE A FIRE UNATTENDED

PUT YOUR FIRE COMPLETELY OUT BEFORE YOU LEAVE!

(clean eating gear is a must). Waterproof food bag with rope attached to sling it on a limb out of the reach of any four legged scavengers. A roll of aluminum foil will come in handy for baking your potatoes and will also help to keep your pots and pans clean while cooking.

First aid equipment—First aid is something that every outdoorsman should know before he ventures into the woods. If he doesn't know anything about it then he should get some expert instruction in it immediately. After becoming familiar with first aid treatments and methods he will automatically know what goes into a good first aid kit. And if it's in snake country, don't forget that snake bite kit. No matter where you go you should always know where to contact the nearest doctor or hospital in case of serious illness or accident.

General gear—Extra rope and heavy cord (it always comes in handy.) Hand axe (sharpened before you leave.) Sturdy pack frame or basket (one that fits you comfortably.) Canteens. Flashlights with extra batteries and bulbs. Mosquito dope. Good pocket knife. Towel, soap, toothbrush and paste. Fishing gear (take just a few items for the particular type of fishing you intend to do.) Since this country is well known to all of us we won't need a map or compass.

Water—Make certain there is a supply of pure water near the campsite. If there isn't, then carry your water with you from home.

Permission to camp—Practically every campsite these days is either privately or state owned, so it's absolutely essential that you have the land owners permission to camp. Almost all state camping areas require a permit. You can get this from the area forester or ranger.

How long will you camp—In this case Saturday noon to Sunday afternoon.

Even though these last three items are last on our checklist, they should be taken care of first. Why? Well shucks, you have to know how long you are going to camp so that you can plan gear and food accordingly. And if you don't have permission in advance you might get to the camping area and turned back by an unappreciative landowner. As for a water supply, you'll have to know in advance whether there is water there or if you will carry it from home.

This might seem like a complicated process just for an overnight camping trip. However, this same checklist can be used for an extended trip of a week, two weeks or even months. As you gain experience as a camper you'll find that the use of a checklist will make your trips more enjoyable and certainly less confusing.

ANGLER QUIZ

By Carsten Ahrens

Fly Quiz

The Fly

- A. Wooly Worm (wet)
- B. Gordon Quill (dry)
- C. Cahill (dry)
- D. Beaver Kill (dry)
- E. Adams (dry)
- F. Chappee (wet)
- G. Bucktail Coachman (wet)
- H. Cinnamon Sedge (dry)
- I. Cock-A-Tush (wet)
- J. Bucktail Streamer (wet)

What It Simulates

1. Fresh Water Sculpin.
2. Eastern Fly.
3. Deer Fly.
4. Caddis Fly.
5. Gnat.
6. May Fly Dun.
7. Hellgrammite.
8. Derivation of an old English fly.
9. Minnow.
10. May Fly Spinner.

Answers on Page 14

We Got The Trout Goats

by Keen Buss,

Fishery Biologist, Pennsylvania Fish Commission

PHOTOS BY GLENN HOY

Getting the trout goats is sometimes a difficult proposition. In the first place it sounds like a hair-brain idea to aggravate them and make them bite better, but actually it is a method to grow them cheaper. This last statement is still probably very confusing unless one thinks that trout grow best on goat meat. Trout probably are not repulsed by the aroma rising from a lean old billy goat but this is not the purpose of getting the trout goats.

The object of getting the trout goats was based on the simple fact that these ruminants can be utilized as animated lawn-mowers and brush cutters. Their stomachs can digest weeds, briars, twigs and most any other type of vegetable matter. Tin cans are not ac-



VIEW OF raceway bank in June before the goats were introduced.

ceptable, but they do love the labels. Therefore it was reasoned that goats would form a biological control to the weed problem in the extremely steep banks of the raceway at the Benner Spring Fish Research Station.

The powers-that-be were convinced that goats would play a part in reducing the cost of trout rearing. However, when permission was granted to purchase some of these animals, the problem of classification in the current budget was raised. In state budgets, money is allotted through object numbers such as



BY THE TIME the first snow fell the banks were trimmed by the animated lawn mowers.

Object 12—Wages, etc. To clarify the situation and justify the purchase of goats the following memo was sent to the accounting office.

“Subject: Purchase of Goats

To: Mr. P. J.

From: Mr. G. L.

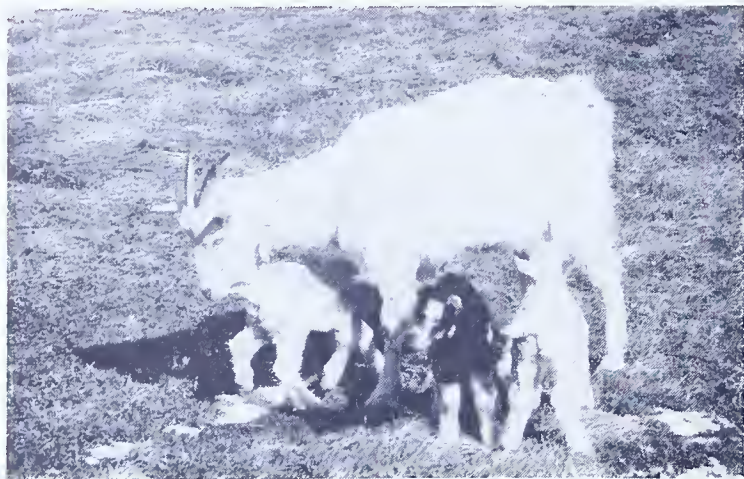
Much of the area along the raceways and ponds at the Station will have a heavy growth of weeds this summer. To mow by hand will require more manpower than is available. It is therefore suggested that goats and or sheep be purchased for this weed control.

Purchase of such livestock has not been made by us heretofore and we are uncertain of the proper classification as to object numbers

Several object numbers appear possible as listed below:

(1) Object 12—Wages

This appears a possibility since goats would be replacing temporary labor. Is there a wage scale for goats? If goats were retained for more than ninety days would they have to be placed on regular salary payroll? There would be the need of frequent changes of marital status and numbers of dependents for withholding tax.



"FOR NOW this is the best kind of chow."

(2) Object 22—Food and Forage

It would seem logical to place goats—along with fish food—under this object except that in this case, the food and forage would do the eating rather than being eaten as is usually the case. Is this permissible?

(3) Object 35—Rental of Equipment

It may be possible to rent goats during summer months and return them to their owners next fall. This might be construed as Rental of Equipment since, in effect we would be renting power mowers and since, we might add, billy goats often generate exceeding power. If this object applies, kindly inform as to disposal of any kids born during rental period. Should they be returned to the original owner or become state property? Is there an approved state price list for goats?

In conclusion, how the h— can we buy these critters?"

In answer to the above memo, the following reply was received:

"Subject: Purchase of Goats

To: Mr. G. L.

From: Mr. A. D. (substituting for Mr. P. J.)



"WHEN WE grow up we're going to be trout goats."

It is unfair to carry goats under Object 12 (Wages) because of the retirement fund involved. Goats never live to be sixty and if we have to pay this fund to the offspring, the book work would eat up more paper than the goats do.

It is not permissible to put the goats under Object 22 (Food and Forage) unless you intend to eat them.

Since it is illegal to eat state property it is advised that the forage be eaten by the goats and you forget the food.

Even though goats can be construed as power mowers, it is not possible to get them under Rental of Equipment. The power generated by the billy goat will not be effective until the following spring, when vegetation will be present to be consumed and to generate mowing power within the critter. And by that time the owner will have benefit of all power generated the preceding summer, or goat-growing season. Since the Commonwealth dare not supply free power, we suggest checking the Objects in your budget again.

Object 42 is for livestock. Even though goats are not the usual livestock for a hatchery, they may be purchased as such, even though the smelly little critters most certainly may have other classifications."



"WE KIDS stick together."

If the boss reads this we just want him to know that the foregoing letters were figments of our imagination to put a little fragrance into a smelly subject. We did buy the goats. The goats did a remarkable job in mowing the weeds in the fenced-in areas. In fact they helped us save more than 200 man-hours which would normally be required to cut the weeds and brush twice a year. The accompanying photographs will prove the point.

However, as we are writing this, two of our nanny goats have given birth to five kids—that's right—one had triplets. We still have three nanny goats which we think are "that way." Not to start this over again, but just how do we get rid of some of these surplus trout goats?

Governor Lawrence Gets Number 1 Fishing License

Albert R. Hinkle, vice president of the Pennsylvania Fish Commission, presents No. 1 Pennsylvania resident fishing license for 1959 to Governor David L. Lawrence.

The presentation was made on Monday, April 6, and took place in the executive office at the State Capitol.



Weather Bureau Fishing

A thermometer is one of the best "lures" a man can own.

You may not rate it in the same class as pork rind or a "river runt," but it'll account for just as many fish. Next to an outboard motor, this fragile tube is one of the most effective fish-finding devices known to anglers.

Water temperature, more than any other factor, governs the habits of your favorite game fish, observe the makers of Mercury outboard fishing motors. It determines when and where they feed, and often makes the difference between full stringers or a trip to the fish market.

Don't dismiss fishing as a matter of luck. Or say that recording water temperature is a bunch of scientific gobbledegook and a waste of time. There's as much merit in this temperature business as in most advice you'll ever receive.

Fish have definite needs. Principally, they require

oxygen. This vital element escapes into the atmosphere as the water warms. That's why summer fishing is best at considerable depths and at night when the water has cooled. But for daytime angling, fish the deeper water which contains more oxygen and, consequently, more fish.

To check water temperatures, Mercury suggests a minimum-reading thermometer attached to a line with knots tied at three-foot intervals. Check the depths until you reach the preferred temperature. When you've determined the proper fishing depth, you'll save straining your casting arm, and you'll catch more fish.

Ask your local conservation officials for specific information on the local temperature requirements of the fish you seek. Different species favor different water temperatures. The next time you inventory the tackle box, jot down a thermometer along with new plugs needed.

—*Outdoors Inc., Columbia, Mo.*

Fly Tying

... via simplified methods

Part V

By **GEORGE W. HARVEY**

*Associate Professor, College of Physical
Education and Athletics
The Pennsylvania State University*

Illustrations by **James E. Carley**

The Streamer Flies

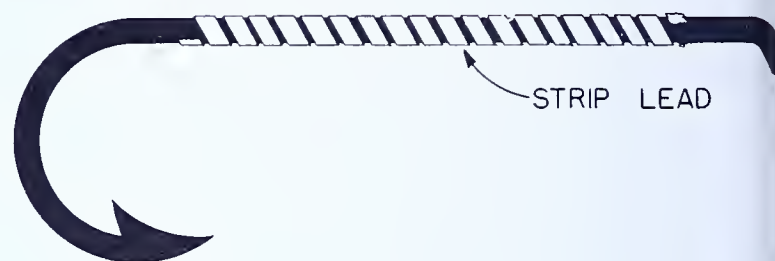
The feather and hair winged streamer flies are probably the most interesting for the beginner to tie. Many patterns are quite gaudy insofar as colors are concerned and really eye-catching in their beauty. Practically every conceivable combination of feathers and hair has been used to construct these flies, and the beginner can experiment at will. Strange as it may seem to some, it will be practically impossible to tie up any creations that will not take fish.

The streamer flies are usually tied on long shank hooks. No particular size or length is standard because in different localities and waters, larger or smaller flies are in order. The shorter winged streamers are popular in Pennsylvania; but in New England the same pattern tied on the same size hooks will have wings nearly twice as long. I suppose the reason for this is because the minnows that supply the bulk of the food for fish in New England waters are longer than those in Pennsylvania waters. Of course, there are many fancy and highly colored patterns that do not imitate anything and are, no doubt, taken by fish simply out of curiosity. These should really be called attractor flies. The streamer flies are by far the most versatile type of fly known today because any fish that will take any artificial lure can be caught on a streamer fly. This not only applies to fresh water fish but to all the salt water species as well.

These flies are effective because of the undulating action they produce when wet. It is well for the beginner to keep this in mind because if the fly is dressed too heavily, much action is lost. This loss of action is especially true with the hair winged streamers.

Diagram No. 35.

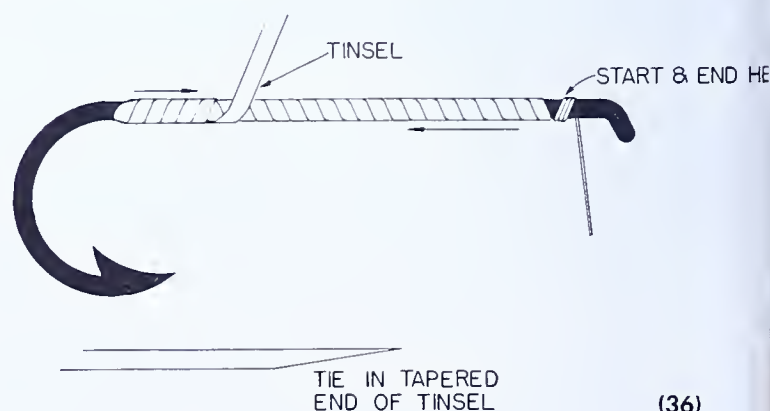
Many streamer flies are tied with weighted bodies. Strip lead is generally conceded to be the best because it is flat and easy to work with. Any weighting material that is not flat makes the winding of smooth, ridgeless, tinsel bodies difficult. Lead may be purchased in



WEIGHTED BODIES (35)

sheets and cut into various widths suitable to the hook size. The lead may be wrapped compactly, or slightly spaced as in Diagram No. 35. The spacing you use depends upon the weight you desire to have in the finished fly. The lead may be wrapped on in precisely the same manner used in the building of bodies previously described. However, I prefer to spin on the strip lead, hence will describe this method only because I feel it is the quickest and best.

Grasp end of lead between thumb and finger of right hand, and hold lightly a bit farther back with left hand. Twist end in right hand one or two turns counter-clockwise around shank of hook just back of the eye. Now the lead is started. Keep feeding lead with the left hand and spinning counter-clockwise with the right-hand thumb and finger until you have the shank of the hook covered as in Diagram No. 35. Do not run the lead all the way back to the bend, or up close to the eye. Secure the tying thread back of the eye, then take a few turns over the first turn of lead, back of the eye, secure the lead and keep it from spinning when the body is wrapped over it. All bodies with the exception of tinsel bodies are tied and wrapped on in the usual manner.



(36)

Diagram No. 36.

Diagram No. 36 illustrates the technique used in winding on the tinsel body. First, cut one end of tinsel

to tapering point. This end is tied in at point marked "start" in diagram. This tapered end makes it much easier to start winding the tinsel smoothly. Just to convince yourself, try tying in tinsel with square end and see how it is nearly impossible to start winding tinsel without causing a hump. Wind tinsel clockwise and close together over the lead base up to the bend of the hook; then return, as diagrammed, to starting point and tie off in the usual manner. If the tyer is going to tie several flies of the same pattern, it will save time if he ties all the bodies first. This is the procedure most professional tyers use. Of course, they may tie several hundred dozen of the same pattern.

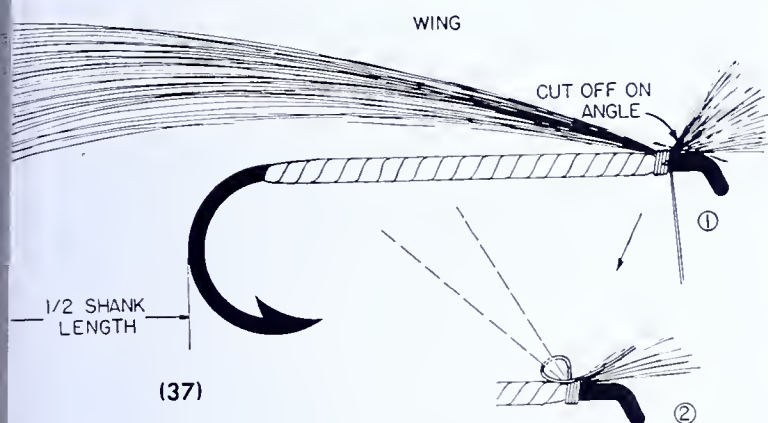


Diagram No. 37.

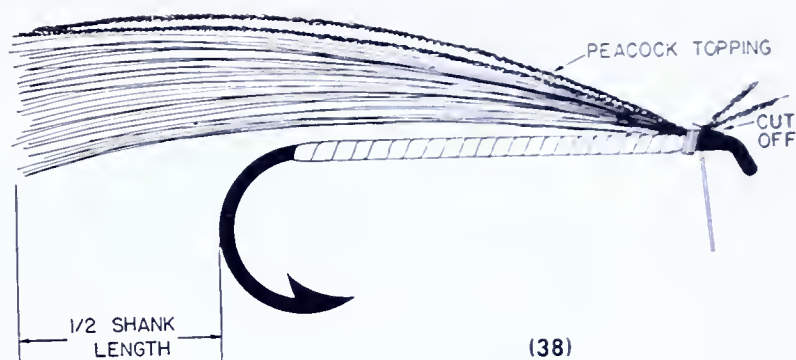
Diagram No. 37 illustrates the method of tying on the hair wing or bucktail type streamer fly. It is rather difficult to suggest an exact length for the streamer wing because in different localities the length of wing varies. I believe the most popular length is about one and one-half times as long as the shank of the hook. Cut section of hair near roots and hold by tip ends in left hand. With right hand pull out all short hairs and fur. Now hold by butt end and pull out long hairs, and put back in bunch so as to keep tip ends as even as possible. If you do not have an idea of the amount of hair to use for this wing, I suggest you purchase a hair-wing streamer fly to use as a model. Hold hair in the same manner as was illustrated for the tail, and tie in as illustrated. After hair is secured, cut off excess on angle as (1). Hold wing up and wind tying silk around base as in (2), and continue making several more turns over wing in the usual manner.

Diagram No. 38.

On some hair wing patterns, topping is used. Quite often this may be peacock herl or golden pheasant crest feathers, but many others may be used, depending entirely upon the pattern. Tie in as illustrated in this diagram (No. 38) and cut off the excess.

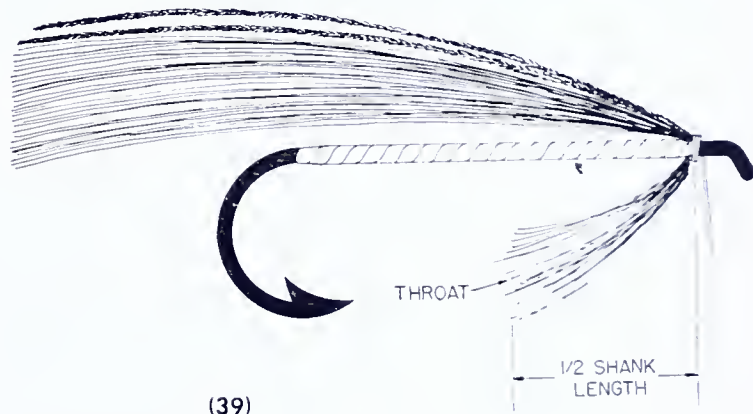
Diagram No. 39.

The throat on the streamer fly is usually fibers from a large hackle, but fibers from any other feathers are used, depending upon the pattern. The length of



(38)

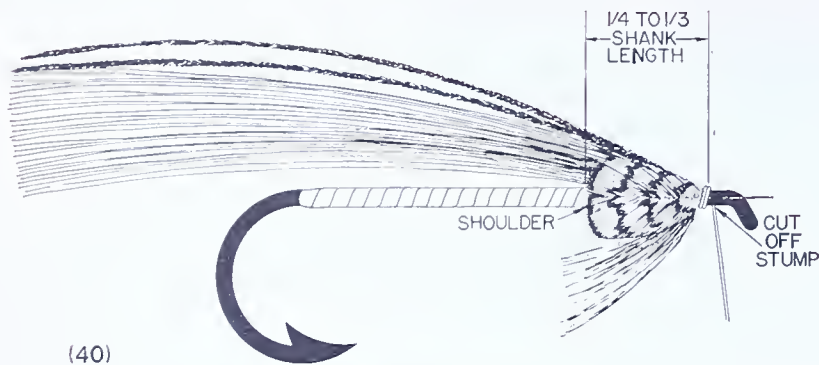
the throat varies but usually does not extend beyond the point of the hook. It will probably be easier for the beginner to take the hook out of the vise and turn the bottom side up before tying in the throat. It may be tied in by the same method as the tail. The experienced tyers never change the hook, but hold the material under the shank and tie it in from the bottom. I will describe this method. First, select material and cut to the desired length. Straddle shank of hook with thumb and finger of the left hand. Pick up throat material with right hand and transfer to thumb and finger of left so that the tip ends of the fibers point toward rear of hook, and stump end it at position where it should be tied in (right below wing). Bring tying thread down between finger and throat material, then up on the opposite side between the thumb and throat. Squeeze thumb and finger together and tighten by pulling up. This is just the reverse of the procedure used to tie in the tail.



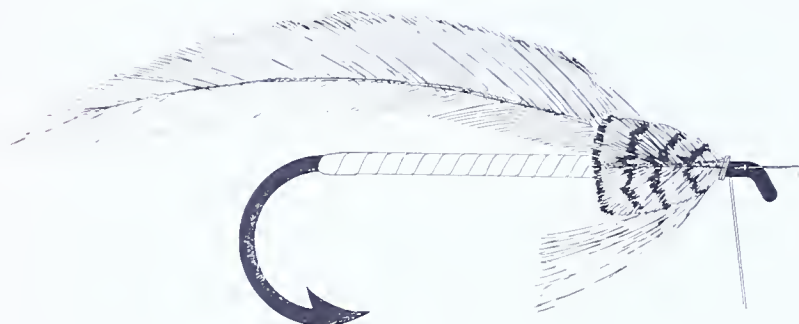
(39)

Diagram No. 40.

The shoulder, cheek, or eye are all tied on in the same manner. Select two feathers with identical markings and as near the same size and shape as possible. Strip off the fibers until the feathers are the desired size. Do not cut off the quill or mid-rib. Hold on side, and tie in by securing quill at point where fibers start with several turns of the tying thread. Now take hold of mid-rib and gently pull feather in to desired position as illustrated in this diagram. It is a good idea to pull the shoulder feather far enough so that a few of the fibers are just under the tying thread. This will help keep the shoulder from turning or twisting out of position. Follow same procedure for the other shoulder. Cut off excess stumps and complete by wind-



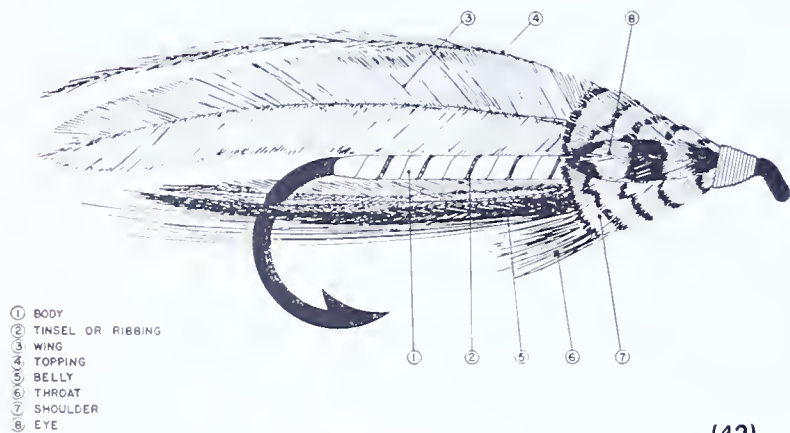
(40)



(41)

STREAMER

COMBINATION BUCKTAIL & STREAMER



GRAY GHOST

(42)

ORDER IN WHICH MATERIAL IS TIED ON

ing on enough tying thread to cover all visible material, and to give a nice smooth head. Finish in usual manner, and lacquer head any desired color.

Diagram No. 41.

The feather wing streamer is one of the most popular and one of the best "fish-takers" of all streamer flies. I believe one can more closely imitate many

of the natural minnows with this type of fly because of the wide variety of feathers and numerous-colored hackles one has to choose from. In addition, the undulating action produced by the saddle hackle is very lifelike and, as a result, presents a very tempting lure for the fish.

Saddle hackle—the long, tapering, fine-quilled, or mid-ribbed hackle that hang down on the flank of a mature cock bird—are the best feathers for this type of fly. If none are available, the large neck hackles may be substituted. I would recommend, when using the neck hackles, to select necks that have slender-quilled hackles if possible. The heavy quilled hackles do not have nearly the undulating action, when fished, and are harder to work with.

First build body, then select matching hackles for wings. I usually use four hackles, two on each side, with the concave sides facing each other. Be sure to have ends even. Strip off excess fibers from stump end until you have the desired length. Hold in exactly the same manner as when tying in the tail. All other steps are the same as previously described.

Diagram No. 42.

This diagram shows the order in which materials are tied on for a combination bucktail and feather wing streamer. I will describe the Grey Ghost, with red throat added.

(1 and 2) Body is orange silk floss ribbed with gold tinsel. (3) Wing is four slate gray or blue dun matched saddle hackles. (4) Topping is golden pheasant crest feathers. (5) Belly is a term I use that is new to the fly-tying trade. I use it whenever any material is tied on the under side of a streamer that represents the belly of a minnow, and is approximately as long as the wing. The term, commonly used to describe this, "the throat," is not an adequate term because both "throat" and "belly" may be used on the same fly. The throat is really a beard-type hackle, rarely extending beyond the point of the hook. Four strands of peacock herl are tied in first, then white and yellow bucktail. (6) Throat is red hackle fibers. This throat description is added for illustrative purpose only. (7) Shoulder is silver or zebra pheasant breast feathers. (8) eye is jungle cock neck feathers.

Answers to ANGLER QUIZ

7	A	8	F
10	B	5	G
6	C	4	H
2	D	1	I
3	E	9	J

Let Us Be Quiet!

**. . . the noisiest things on the river are
people . . . no wonder the fish don't bite!**

by Ray Ovington

So how do we keep from making noise? That's a good question and one that requires a sample trip to the fishing grounds to demonstrate the various kinds of noise that are not only nerve-racking to the fish but also a needless frustration to the fisherman. In this mythical trip you will, perhaps, see yourself in action and also recall seeing others making the same errors.

Three anglers are in the outboard skiff, ripping off the miles in the direction of the hot spot. As we move into sight of the fishing area, we don't slow down, we continue almost up to the spot and suddenly kill the motor. The wake piles up behind the transom and almost spills over it. The resultant wave from our wake riles up the area and bangs itself up against the bank. A scene once quiet and serene is now completely broken. Every fish in the neighborhood knows we have arrived. The herons and other shore birds retreated long before . . . barrenness is upon us.

Now, Joe, up front, struggles with the anchor and bangs it around most generously in the bow, trying to untangle it from the rope. With a mighty splash he heaves it as far as he can away from the boat. Why, he nor anyone else knows, but he does. In so doing he rocks the boat and the two rods that have been resting quietly against the gunwales rattle to a comfortable spot. Henry, on the middle seat can't get his tackle box open so he forces the top by pulling on the handle. The top flies open and in the melee the entire contents of the box bang and rattle with the sound of machine gun fire as they hit the bottom of the boat. Rufus, in the stern gets himself set and in so doing, has to arrange the oars to suit all aboard and bangs them around a bit, just for added percussion to our angling symphony. Upon picking up his rod, the reel drops off and falls with a deafening thud to the floorboards.

By this time, even the crabs and crawdads must have had enough and have taken off for parts unknown.

Now, Joe makes a cast with enough body motion to almost upset the boat, an entirely unnecessary motion, because the rod power is the only thing that sends the lure out from the wrist motion, not the action

of the pelvis and sundry other sections of the anatomy. The resultant waves break the surface silence. Henry gets out his cigarettes and fumbles for his lighter, but as it pops out of his pocket it flips half way up the boat bounding and banging its way along from rib to rib with a nice musical sound like that of nervous kettle drums!

"How's the fishing boys?"

"It is terrible . . . no fish around I guess."

("No wonder!")

You think this is exaggeration? I have fished with a lot of guys in my life and though I have been long of the school of anti-noise, having fished for trout and bass up North at night where silence is the only way. I have cursed a number of my best friends under my breath. I have also cursed the others in the general vicinity for being noisy, thereby spoiling the fishing in the immediate area for all concerned.

Now, none of this noise is necessary. Izaak Walton wrote that angling was a contemplative sport. He was right until the average Joe got into it and through no reason or purpose forgot that nature is a quiet thing, not to be disturbed by outside influences . . . noise being one of the paramounds! Noise does not only disturb the fish but it certainly does not add to the contemplative aspect of a day on the water. We fish to get away from noise. Fishing should be the one great opportunity to display our complete control over ourselves to make every move as easily and as quietly as possible. The Indian knew the value of quiet in the woods and on the waters and that is why he was the great fisherman and hunter, despite his crude tools.

Years ago when I was a kid I remember the old trick that perhaps was pulled on you when you swam under water. Another kid would quickly grab two stones and knock them together violently underwater. The resounding crack in your ears was a real shocker. Well, this same thing happens when pounding of oars, dropping of items on the boat floor, or suchlike happen in the boat. It acts as a resounding board for

every movement therein and this shock vibration is transmitted very accurately through the water to the ultra sensitive hearing organs of the fish. They spread alarm, or wake him up as the case may be. No self respecting fish worth his salt will put up with that sort of nonsense anymore than you would.

Skin divers will tell you of the sounds they hear under water from the noises going on in the boat overhead. Ask any one of them.

So, how to get rid of this noise? First of all, pad the boat bottom with a rubber or plastic carpet (it has other practical uses too, among them being anti-slipping and also keeping sand and slime from gritting into the wood) When something drops the sound is cushioned. Another point, starting from the anchor. Have things well organized so that there is no necessity for banging the thing around. Simply lift it up and place it in the water, don't throw it. Keep your tackle in a safe, set place where it will not roll and bounce around. That is just good tackle insurance anyway. Make sure that the tackle box will open before you go fishing and keep it on the bottom of the boat. It cannot fall then. Simple? Now, all these things will not only help keep the silence, but will also make the entire operation of fishing much more enjoyable for yourself, but as important, for the rest of the crew of your good ship.

Some people call it common courtesy for the fish as well as the fishermen. Don't come blasting, rocket-like up to your fishing spot. Stop well away, slow down and then drift quietly into the "hole." When you fire up to take off for home, remember that other boats may be around you or that others might come that way in the next few moments and want to fish there. Leave the fish you didn't catch, alone . . . and give them a fair chance at refusing the lures offered by the next gang.

There have been many arguments about the noise factor of outboard motors and their effect on fishing. The steady rhythm of a motor does not disturb fish, unless of course a forty mile an hour boy chooses to go through a shallow fishing spot wide open. Fish have been seen following in the prop wash of big cruisers as well as outboards, but that is no reason to dive bomb them. Use your own self as the barometer of sound . . . approach the area slowly and quietly remembering that the wake from a sudden dethrottling is as much or more disturbing as the actual sound of the motor itself.

In wading, such as bass fishing or sea trout angling, the same holds true. Don't slash around with your legs. Wade or walk quietly and if you feel that you are quiet, you will be quiet. Both you and the fish will enjoy the experience ten times more.

Conservation Is a Concept

Many persons have struggled to adequately define the word "conservation." About the best anyone has been able to do is to say it means "wise use."

Defining the word is difficult because, in reality, conservation is a concept.

From a practical point of view, the conservation concept asks that topsoil be held in its place, where it is most productive, by living plants. It sees a forest as something more than a wood factory—a storage reservoir for rain water held in the ground by millions of small roots. It regards surface streams and lakes as arteries of life-sustaining water of immense value to municipalities, industries, and agriculture, rather than just waste disposal systems.

From the aesthetic viewpoint, the conservation concept has an appreciation for beauties of nature large and small. It recognizes the complicated interrelationship of living creatures to the soil and water and to each other. It values hunting and fishing as recreations rather than activities just to produce wild meat.

Conservation means more than "conserving" or "saving" or "protecting." It means more than "wise use." Actually, conservation is a philosophy of—or an approach to—life, one recognizing the place of all in the Divine order of things.

The foregoing may bear resemblance to a sermon and it was so intended, because true conservation cannot be anything but closely allied to religion.—Louis S. Clapper, *formerly Tennessee Game and Fish Commission, now National Wildlife Federation.*

There's virtue in humility, even to a fly fisherman

of worms and fishermen

by Sigurd F. Olson



"YOU WILL find angling to be the virtue of humility with a calmness of spirit and a world of other blessings attendant upon it."—I. Walton

To certain people speckled trout are more than fish, and the catching of them an aesthetic experience. To these, all other fish are rough and while in the taking of them they admit it is possible to know some satisfaction, actually it is not sport. To be sure, they argue, other fish are good eating, they may play well on the end of a line, but in the last analysis one can hardly speak of them in the same and almost reverent breath as speckles.

To the trout fisherman these creatures of spring fed pools and riffles are the loveliest on earth. So beautiful do they seem, it is almost gross to consider eating them. These purists firmly believe that once a man has seen a speckled trout fresh from the water, thrilled to its crimson spots and the mottling of black and green—especially if the taking has been with a dry

fly—something has happened to his soul. He has become an artist, a connoisseur, a dealer in rare values and a searcher for the unattainable forever.

So when March comes around and the snow begins to sink and the air is full of the sounds of trickling rivulets and the smells of thawing earth, those who feel this way about speckles go around with a look of expectancy and a certain aloofness from mundane things that sets them apart. Deep within themselves, they feel sure that they alone have in their possession a secret of happiness no one else can share.

And being one of these, or thinking I was in the days before I had gained understanding of the ways of others, I was somewhat troubled. Arrogance, pride, and prejudice, I knew had no place in the "gentle art of angling" for did not the great master say in *The Compleat Angler*:

"You will find angling to be the virtue of humility with a calmness of spirit and a world of other blessings attendant upon it."

Alloofness would not have been in favor with Izaak Walton but who was I in those early years to compare myself in stature or even in tolerance.

One year, I remember, as the zero hour approached, I became even more removed from my work, my family and friends, and then when a softness was in the air, all of my equilibrium was gone. From that moment on, all I could hear was running water, all I could smell was warming sod and bursting buds, all I could see was a speckled trout lying in my creel on a bed of lush cowslip leaves. As the days went by and April came in, I began to count the hours. One night I got out the old fly box and went over the flies one by one, studied them and dressed them with oil and



TYPICAL BROOK trout stream in Spring.

laid them out to dry. There was the tattered royal coachman with which I had taken a big one on the Manitou, the grasshopper I had used on the Isabella, the black gnat of a night in June when the pools were full of spreading circles. I went over the leaders, tested them and smoothed them out, checked my waders, got down the rod and looked over the place where it had been strained.

The day before season opening however, I did something I had not planned on at all. Just why I did it, I do not know, unless it was an instinctive reaction from my boyhood and springs of long ago. I went out to the compost pile, dug up half a dozen good garden hackles, put them in a typewriter ribbon box with a pinch of moss to keep them clean. As I did this I felt rather uneasy, for at heart and by preference I was a fly fisherman and would rather go without a trout than

stoop to bait of any kind. I took the little box and dropped it into my creel, tucked it well under the fly box, the leaders and the rest of my paraphernalia. Of course I would never use them but just for old times sake it was comforting to have them along. After all, I argued with myself, the great philosopher of the River Dove was no purist either, used wet or dry flies, worms, minnows or grubs without making a fetish out of any one or indulging in the feeling that method was more important than fishing itself. And while I agreed with him, I still did not feel right about it. Perhaps, I thought, I might meet a lowly worm fisherman who had lost his bait.

The first day of the season was sunny and warm. As I hiked down the trail the blackbirds sang in every swamp and over the meadows the killdeer called.

When I reached the river, I found the water well over the banks and the pools roily, with the riffles churning with foam. For a while I stood there and looked and my heart sank within me for flies were out of the question. The snowbanks were still firm and crusty in the shade and only in the full sunlight was there any thawing. Still I remembered other opening days when I had taken trout, and with a fly. Sometimes I knew the sun brought out insects on the wing and just then a tiny blue butterfly came out just before me and fluttered uncertainly across the stream. If there was one, there should be more.

And so I chose a Silver Doctor and approaching the pool with the foam swirling slowly in its center, I flipped it out and let it come down softly as mist and made it flutter haphazardly across before taking the air. Then again and again I played it just as the little blue butterfly would have done had it fallen on its way across, but not a rise, nor a single swirl and no more insects did I see. I changed then and put on a grey gnat, and a cowdung, and finally a nymph weighted with a sinker, but nothing moved though I tried everything I had. At last to my shame, I picked out a streamer fly with a spinner, tried the surface, half way under, and then the bottom, but each time the fly disappeared into the depths, it merely swirled in the current with not a telltale tug, not a sign of any kind that there were any trout in the pool at all.

Perhaps, I reasoned, the trout had left the deep water and were in the riffles above, or just possibly it might be my way of handling a fly. I chose a new leader of the finest strand, tied on a new hackle with a yellow body and flipped it across the stream in as pretty and delicate a cast as I had ever made, let it drift to the lower end, retrieved it, tried again and again with half the flies in my box but still no luck. I worked up stream, tried the little pools, the dark hidden places under sunken logs and between boulders, places where during the past season when the water

was full of swirls, I had taken many trout, but the result was the same, not a rise or movement, no matter what I did.

All morning long I tried and when I ate my lunch at noon, I was worried. As I sat there on a warm sunny bank and rested and listened to the sounds of spring, I consoled myself with the thought that there is more to fishing than catching fish. "It is the smells," I said. "The color of the sky and water, the partridge drumming down below me, the things you see that really count. Any one," I philosophied, "who thinks he must catch trout is missing all the fun"—but deep within me I knew this was not entirely true. I desperately wanted to see a speckled trout, did not care how big it was, just wanted to see one in my creel and when I returned home, to fry it to a golden brown and taste the delight of a brookie caught in the spring.

It was then I made my decision. This was no time for flies or fancy techniques; this was the time to remember that little box in the bottom of the creel if I was to realize my dream. There was bound to be a trout in the pool coming up, one that had been there since the spawning of fall and waiting there on the bottom for exactly the sort of thing I could give. Biting off the leader. I put the fly back in the box, fastened on a little hook and a split shot, dug out the typewriter ribbon box and looked at the big worms squirming through the moss. As if to justify the move I remembered what Walton had said about fishing and worms.

"The trout," he said, "is usually caught with a worm or a minnow or a fly. viz, either a natural or artificial fly. As for worms of these there are many sorts, for the great trout the earthworm is the chief."

If the man whose philosophy of fishing has influenced generations and whose immortal words "Study to be quiet" are inscribed beneath the Izaak Walton Window in Winchester Cathedral in England, made no differentiation as to method, who was I to make an issue of how I took my trout? But no matter how I argued and reasoned with myself, I was conscious of planning on doing something underhanded, so strong was the force of habit and the aloofness in which I had held myself for many years. After all, what I wanted was merely to see a trout and if I caught one with a worm, no one would know but me.

I hiked up to the head of a new pool, slipped a big lively worm onto the hook and tossed it into the white foam at the far end. For a moment it wriggled on the surface, then sank slowly and disappeared into the depths. Gently, very gently, I twitched it and worked it back toward me. Then the line tightened and began to move, slowly at first and then as I set the hook it sliced swiftly through the water. In an instant a trout broke the surface and skittered across the pool as pretty a speckle as I had ever seen, perhaps a pound or a pound and a half streaked with flame underneath and the cream of its throat and belly gleaming in the sun. In that moment of triumph, I forgot I had not used a fly, forgot there was anything more important in the world than landing a good trout.

For several minutes I played that fish and it fought as well at the end of my tapered leader as it would have on a fly. Stripping line, I soon had it close and then it was in the net and I was breathless and supremely happy, but only for a moment for again my conscience took me to task.

"You have taken a trout with a worm," it said, "and you supposedly a purist. You're a traitor to the cause, a disgrace to the fraternity and do not forget, though no one knows, you know and you've got to live with yourself the rest of your life, and what will you say when you get home? Must you be a liar too?"

Then in my trouble I remembered the ANGLER:

"I shall tell you what I have found to be a real truth; the very sitting by the river's side is not only the quietest and most fitting place for contemplation but will invite an angler to it."

Not a word about flies or worms and then a truth dawned upon me as well; that if a man took his trout with the proper spirit and with true humility and took no more one way or another, it mattered little to anyone but himself just how he did it.

I caught two more that afternoon and they were beautiful to see and it was comforting to feel them in the creel and that night I told the truth and no one laughed or chided me for all could see that in my eyes was a happy light and the peace all fishermen know.

—Outdoor America

WORTHWHILE READING

Charles Beard summed up a lifetime of study in four quotations:

1. Those whom the gods would destroy, they first make mad.
2. Though the wheels of the gods grind slowly, they grind exceedingly fine.
3. The flower that the bee robs is fertilized.
4. It is only when darkness falls that you can see the distant stars.

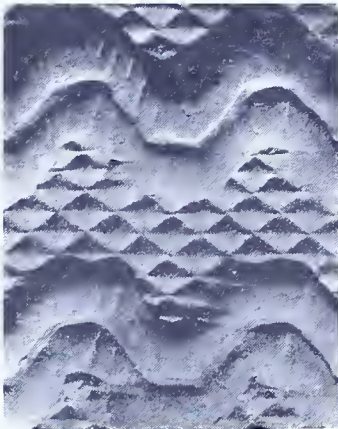
Fishing Gear Puzzler

by Don Shiner

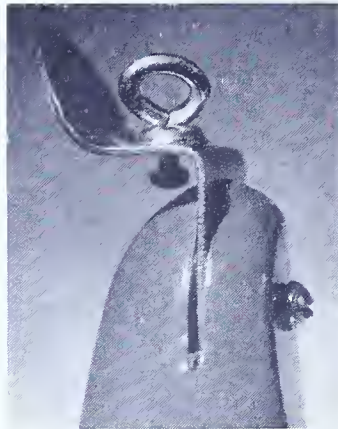
Here is an interesting test that readers of the ANGLER can try on themselves and their friends. The photographs show some small portion of articles of fishing tackle. Study the pictures carefully, then check how many you can identify and test how ob-

servant you have been of your angling gear. Careful, the series is tricky.

Match your answers with those found at the bottom of this page.



1



2



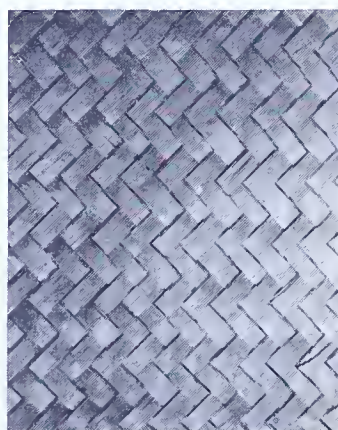
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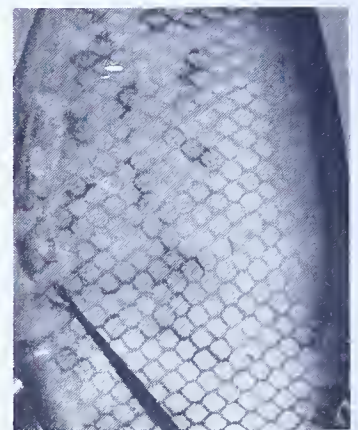
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11



12

Answers to Quiz

1. Boot tread; 2. Plug lure lip; 3. Tray hinges, tackle box; 4. Casting line on spool; 5. Stem and base, spinning reel; 6. Creel; 7. Weedless spoon; 8. Scale finish on plug; 9. Wood frame, landing net; 10. Casting rod handle; 11. Ice tip-up flag; 12. Pick-up bail, spinning reel.

Planning To Drown This Season, By Any Chance?

If you are, and across the country the best available statistics tell us that a couple of hundred of motor-boaters will take this means of uncreating themselves, then here are some suggested methods and shortcuts:

First, and by all means the simplest method, and undoubtless the basic substance of any other method you may choose is quite simple. Don't learn to swim! Any old sissy can learn to paddle around in the water, but it takes a real bravado to face the damp atmosphere of Davy Jones' domain without the ability to propel one's self on top of it. This method, by the way, affords a simple shortcut. Don't wear a life preserver. Who wants to preserve a life? After all, our effort here is to suggest successful methods of departing this mortal existence to a doubtful hereafter via the briny deep.

But above all, if you are planning on drowning this weekend, there's nothing quite like not learning to swim that will accomplish the end.

From here on, it does get a bit complicated inasmuch as there are various materials that must be gathered and used. It may take a bit of time to acquire these things. But after all, if you're planning on drowning, what's time to you?

First requirement for this advanced type of drowning is a boat. Actually, the leakier the better though sometimes if a heavy enough motor is used, a rotten transom will do just as well. No need to be too choosy though. While drowning can be accomplished all by yourself with such a rig, it is ever so much more gratifying if you take advantage of the latest equipment. For instance, lash a Johnson or other make "50" on the back of your 12 foot car-top pram. This usually is a most efficient method. Equally so, but a

slightly more spectacular approach would be to slip off the dock while trying to attach the motor. You'll wind up broadcasting bubbles from the bottom with 90 or more pounds of finely turned but useless metal on top of you.

While it is well to do all these things by yourself, almost anything is more fun with a crowd. If you should be so fortunate as to find about six or more fools like yourself, suggest that you all ride at once. That's the ticket all right, really set the boat in the water right up to the gunwale. But be sure you have signed releases from your passengers. You might change your mind at the last minute after it's too late for them to change theirs.

Silly? You may think at this moment that this seems a rather stupid way to use a perfectly good five minutes of air time but you can bet the bottom of your boat that somewhere not far away, someone, maybe someone you know, is sometime this summer going to pull a stunt that's just as silly as those herein described. And the tragedy of it all will be that you couldn't stop it if you wanted to.

Drowning by any one of these methods is simply another word for suicide. And there's only one thing really wrong with this treatment—you won't actually plan to drown. In fact, it's the other way around. If you plan you'll do the right things and take the right precautions. Then neither you nor your children nor your friends need ever worry about this grisly and soggy sort of an ending.

And by planning rightly I mean learn to swim, learn boat handling and outboard motor operation, learn the "rules of the road" and we'll all have a happier summer.

Extracted from a radio commentary by
Dave Campbell, Director
Water Safety Congress
Birmingham, Alabama

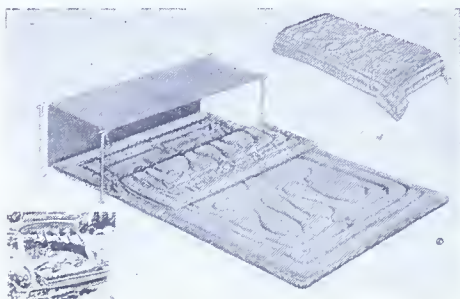


NEW THINGS *in* TACKLE and GEAR

Intended as a service to ANGLER readers wherein new items of fishing tackle and outdoors gear that come to the attention of the editor are introduced, with no intention of endorsement.

Address all inquiries to the respective manufacturers.

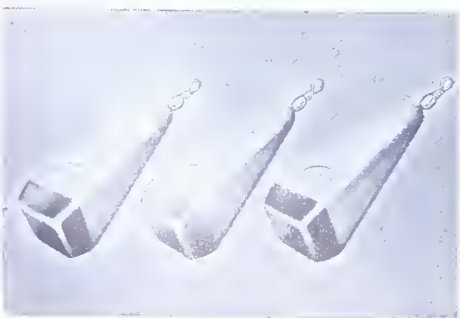
Sleeping Bag for Station Wagon Use



The growing popularity of the station wagon for use in leisure time spent camping in the outdoors has sparked the development of a sleeping bag designed especially for station wagon use. This new sleeping bag, called "Station Wag'ner," fits standard station wagons and can sleep two people comfortably.

The "Station Wag'ner" is 54" x 81" and is completely washable. It is filled with 3 lb. 100% Virgin DuPont Dacron Polyester Fiberfill. The ground, top, and detachable large snap-on canopy are covered with extra-heavy water repellent green Oxford Cloth. A warm plaid suede flannel is used as lining. Two 98" rust-proof aluminum zippers with double tabs and double sewed go all around the bag. These zippers are sewn on the inside of the sleeping bag for greater strength, longer life, and improved appearance.—**Sportline, 1215 West Washington St., Chicago 7, Ill.**

Practice Plugs



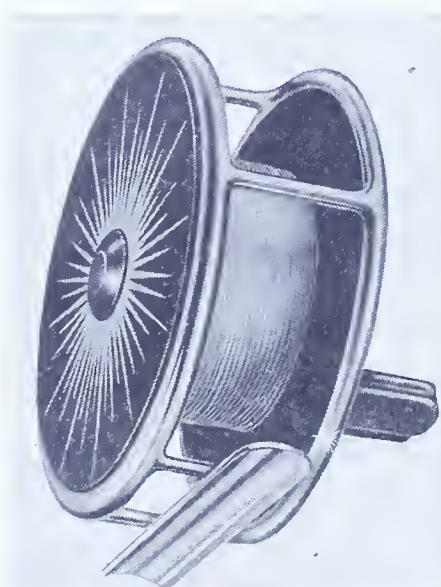
What you've probably always wanted for practice casting is a plug that "drops dead" . . . one that won't bounce or bobble or roll all over the place.

A new type of practice plug that "stays put" when it lands. It's molded of a special resilient plastic of high specific gravity which has "less bounce to the ounce" . . . and its novel square pyramid design prevents rolling.

There are other advantages, too. All three weights— $\frac{1}{4}$, $\frac{3}{8}$ and $\frac{5}{8}$ ounce—are the same size because the guaranteed accurate weight for each is molded right in the plug. And there's a molded-in swivel that prevents line-twist during flight.

Designed for outdoor or indoor spinning and bait casting practice, it's a favorite with Skish enthusiasts.—**Weber Tackle Company, Stevens Point, Wisconsin.**

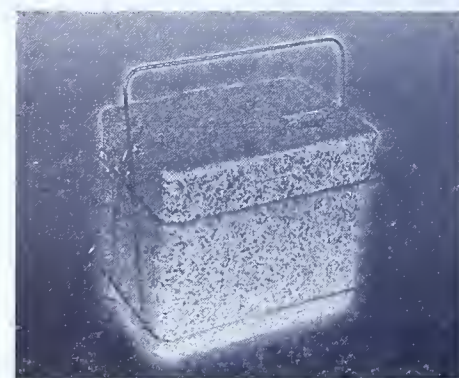
Magnetic Fly Reel



The Johnson Model 5 magnetic fly reel for the fisherman who will accept advanced design in his tackle with the same alacrity as he does in his cars and who wants the ultimate in utility, versatility and handcraftsmanship, all backed up by a lifetime guarantee. The model 5 has no screws to loosen or rust. Instead, a powerful magnetic core, around which the spool spins, holds the reel together, supplies drag and prevents over-spinning. It can readily be converted for either right or left hand fishing and by carrying an extra spool with different weight line, the

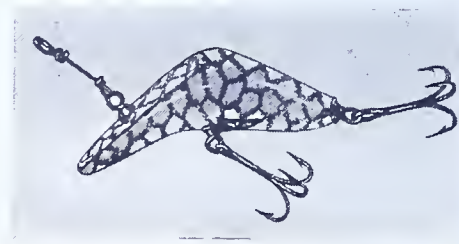
fisherman can transfer it from his light trout wand to his power packed snook, bass bug, bone fish or salmon rod, and retain a blanced outfit.—**The Dennison-Johnson Corp., Mankato, Minn.**

Go-Kooler



A versatile container of molded dylite plastic, a most efficient insulating material, serves the sportsman to carry his lunch and keep it cool (or warm) for days. It's tough, durable, easily washable, won't absorb water, and weighs only 31 ounces, including its wire carrying case and swing-type handle. It has a 13 quart capacity in its 11 $\frac{3}{4}$ inch by 7 $\frac{1}{2}$ inch by 9 $\frac{1}{2}$ inch interior. Extremely buoyant, it could serve as a life preserver in a boating emergency. Available in two models. Write to—**Weber Tackle Company, Stevens Point, Wisc.**

Joe's Deep Runner



If you thrill to the strike of big fish Joe's Deep Runner will give you the fish you want. Joe's Deep Runner has so much live action, glitter and vibrations, it is the perfect lure for fishermen who want fish with the least amount of fishing effort.—**Marathon Bait Co., Wausau, Wis.**



Notes FROM THE STREAMS

An Example for Sportsmen's Clubs

During early April, and previous to the opening of the 1959 trout season, the Standing Stone Creek Hunting and Fishing Association of Huntingdon conducted a program of improvement on the Stone Creek watershed. Additional trash barrels were placed at strategic places, new "across fence" ladder steps were installed and many steps were repaired. The association was assisted by Boy Scout Troop 30.

The Club was also quite active in helping to stock trout, and they acclaimed the fish as some of the finest brook trout ever stocked in the area.

—Richard Owens, warden
Huntingdon county

Farmer to the Rescue!

During the trout stocking last spring we found the approach to Little Beaver River in Beaver county soft and spongy and it looked like we'd have to miss a good portion of the stream. Hearing of our plight, Mr. G. Haggerty of R. D., Enon Valley, offered his tractor and wagon with which we were able to complete stocking the entire area. It's this kind of land-owner cooperation which really counts.

—Clifton E. Iman, warden
Butler & Beaver counties

How Stupid Can One Be?

On March 25th on Presque Isle I was helping Shyrl Hood check Fish Commission nets set in the lagoons to obtain northern pike spawn. We noticed a young fisherman about sixteen years of age with his first fishing license, fighting and landing a fish. As we approached him we observed that he

had caught a 30-inch northerner and was a mighty proud fisherman. However, when his father came to pick the boy up, he remarked, "You've been fishing all this time—is that all you've caught?" By the boy's expression, he didn't think very much of his father's remarks. It was obvious that the boy's father never did any fishing.

—Norman E. Ely, warden
Erie county

Bad Roads Beaten By Good Sportsmen

An unusually rough winter left roads in such condition that fish stocking would have been impossible in many areas in Warren county. However, due to the usual fine support by local sportsmen, the job was done with the help of Jeeps and pick-up trucks provided at points where heavy Commission trucks would have bogged down. This help was certainly appreciated by the warden.

—Kenneth G. Corey, warden
Warren county

Believe It Or Not!

While on night patrol on Lake Carey I met Ralph Craigle of Tunkhannock who was spin fishing for walleyes. Craigle had just landed a fine walleye and with the use of a scale and tape measure hurriedly borrowed from a nearby store, we found it to be 29 inches long and weighing 9½ pounds. The fish was heavy with eggs so what does the fisherman do? He carefully released it and it swam away apparently none the worse for its experience. My, what a display of sportsmanship in releasing this fine fish to spawn in the lake.

—Stephen A. Shabbick, warden
Wyoming county

Another Newsreel For Clubs

The Denison Johnson Corporation has just released its Anglers News Reel #2, a 15 minute 16 mm. movie with sound. The series of sequences, some in color, others in black and white, take the viewer to such widely separated events as the Annual Tuna Tournament in the Bahamas, a fishing tournament for kids in New Hampshire, and one for oldsters in Holland, where, incidentally, the crowding of fishing waters might give Pennsylvania anglers something to think about.

Coverage is given the great Metropolitan Miami Fishing Tournament with shots of the colorful opening day parade of fishing boats at Islamorada, Florida, and also of some exciting sailfish action. Announce-

ment of the Corporation's new Magnetic Fly Reel is made in a three minute bass fishing series in color, in the gorgeous autumn scenery on a Virginia bass pond. The film winds up with lots of action fishing for silver salmon and grayling in Alaska and the Yukon.

Sportsmen's Clubs and Service Clubs may obtain it by writing the Denison Johnson Corporation at 720 Minneopa Road, Mankato, Minnesota. Other pictures obtainable from the same company are Anglers News Reel #1, 15 minutes, sound, combining black and white and color; Trout Fishing in Nevada, 15 minutes, sound and color; Discovery in Bermuda, 27 minutes, sound and color.

There's Glory Enough For All

It sometimes seems that with the increase of population the competition for the top rungs of fame and fortune becomes more and more devastating.

Competition for dollars, for goods, and for material things often is completely ruthless and savage.

Competition for personal recognition for real or synthetic accomplishments is too often a vicious clash of personalities, whereby every good in the "cause" is lost.

The "good cause" of conserving our natural resources should certainly be free from the blight of competition for recognition, power and fame, but every once in a while unworthy motives are injected.

There are the disputed claims of who started the movement, who originated the slogan, who should have the most credit for leadership.

There are two axioms which people seem to forget. One is that there is glory—and hard work—enough for all. No one should be very proud of a credit, recognition, or personal power which is gained only by tearing down another person, group or movement.

The second axiom is that there really is nothing fundamentally new in conservation, or anything, for that matter. Every thought or idea has been expressed, perhaps in a different form and application, sometime in the past. One can be amazed by carefully reading in early issues of the *Conservation Volunteer*, the *Conservationist*, the *Fins, Feathers, and Fur*, the *North Woods* and the *Minnesota Forester*, which are conservation publications from 1908.

Solutions, suggestions and plans advanced today as something entirely new are but repetitions of expressions years ago. Delving into early American publications and those of other nations around the world, we find the origins of today's ideas. And of course, the Holy Bible has all of the fundamental precepts of conserving the natural resources.

Therefore, the only credit or moment of fame modern man really earns is that he reminds us of things which should be done and provides the leadership for doing them.

Competition takes many forms; a jealousy which prompts a man or group to sabotage anything which he or they cannot control. It may be false testimony or opinion before a legislative committee with the result of confusing the committee and defeating needed legislation.

It may be the formation of a competing organization which divides the support and the effectiveness of all, or it may be the continuous sniping which undermines the confidence of uninformed people in the official conservation agencies.

We may have differences about methods of accomplishment and may interpret our information incorrectly, but there should be no place for malicious action, jealous competition and vicious sabotage of resource conservation.

We have completed the first century of living in Minnesota, and a part of growing and developing has been the building of the firm foundation of natural wealth and production. Few should dispute the claim that we have emerged with enough of the original resources, much experience and knowledge, and a force of people trained in conservation to move rapidly ahead.

Honest criticism, reasonable demands, and confident support will keep the conservation efforts on the true course into the next century. This is a building up, not a tearing down, which will be so necessary to keep Minnesota growing and assure a future for her citizens.

There is, and always will be work for all—and applause, voiced or not—for work well done.

—Alfred L. Nelson, Editor
Minnesota Conservation Volunteer

I AM A TREE

"Ye who would pass by and raise your hand against me, harken ere you harm me. I am the heat of your hearth on the cold winter nights; the friendly shade screening you from the summer sun; and my fruits are refreshing draughts quenching your thirst as you journey on. I am the beam that holds your house, the board of your table, the bed on which you lie, and the timber that builds your boat. I am the handle of your hoe, the door of your homestead, the wood of your cradle, and the shell of your coffin. I am the gift of God and friend of man." From the Yearbook of Agriculture, 1949, TREES.

Fisherman's Paradise

1959 SEASON

(LOCATED ON SPRING CREEK, NEAR BELLEFONTE, IN CENTRE COUNTY)

RULES AND REGULATIONS

1. **OPEN SEASON**—May 15 to July 18, both dates inclusive. **NO SUNDAY FISHING.**
2. **OPEN**—from 8:00 A.M. to 8:00 P.M. (E.S.T.) or until Klaxon is sounded.
3. **ALL ANGLERS MUST PERSONALLY REGISTER BEFORE FISHING AND PERSONALLY CHECK OUT AND RETURN IDENTIFICATION BUTTON BEFORE LEAVING PROJECT.**
4. **TROUT IN THE POSSESSION OF ANGLERS MUST BE DECLARED AND DESCRIBED BY SIZE AND SPECIES AT REGISTRATION BOOTH WHEN CHECKING INTO PROJECT. FISH NOT SO REGISTERED WILL BE CONSIDERED AS HAVING BEEN CAUGHT ON THE PROJECT.**
5. **ANGLERS MUST PARK AUTOMOBILES BEFORE CHECKING IN AND MUST CHECK OUT BEFORE REMOVING AUTOMOBILES FROM PARKING LOT.**
6. **DAILY LIMIT**—Only **ONE TROUT** may be killed. The Angler must stop fishing after **ONE TROUT HAS BEEN KILLED.**
7. **LURES**—Only artificial lures with barbless hooks or regular hooks with the barbs removed may be used. No swivels permitted. Artificial lures and streamers of construction materials limited to feathers, silk, wool, fur, hair, tinsel or fibre, except that bodies of flies or streamers may be of plastic, cork or rubber. Weight or sinkers up to the equivalent of 2 BB shot may be built into the fly or streamer or affixed to the leader. Other lures commonly described as spinners, spoons, or plugs made of metal, wood, plastic or rubber, singly or in combination, are prohibited.
8. Fishing with, or possession of, any live bait, angle worms, meat, liver or any other bait, is a violation of the rules and regulations. To avoid embarrassment and possible arrest do not carry your lunch to the stream.
9. **SIZE LIMIT**—All fish caught from large stream under 10 inches in length and on ladies stream under 7 inches in length must be carefully returned to the water.
10. All anglers holding a Pennsylvania Fishing License will be permitted to fish five days during the season, Angler is permitted to register once only on any one day.
11. The dressing or cleaning of fish will be permitted at the designated places, provided the fish have been properly checked out.
12. **POSITIVELY NO WADING**—in the stream for any purpose permitted.
13. Fishing may be done only with fly fishing tackle. Spinning is not permitted. Any method of fishing whereby the fly or streamer is cast directly from the reel is prohibited.
14. Feeding fish **PROHIBITED** except on Sunday.
15. All foul hooked fish must be carefully returned to the stream.
16. Violators of the rules and regulations will be subject to a fine of Twenty Dollars (\$20.00), and revocation of fishing privilege on the project for one year.

If you like this project you can help the sportsmen of the state by obeying these rules and reporting any infraction to the officers.

Section 251 of the Act of May 2, 1925, as amended, provides the Pennsylvania Fish Commission with authority to promulgate such rules and regulations for the angling, catching or removal of fish in or from any waters of this Commonwealth as may be deemed necessary. Penalty for violations—Twenty Dollars (\$20.00) and in addition thereto may be fined Ten Dollars (\$10.00) for each fish caught, taken or had in possession, contrary to these rules and regulations.

PENNSYLVANIA FISH COMMISSION

WHAT GOOD ARE TREES?



WHAT GOOD ARE TREES?
WHAT GOOD ARE TREES?
LET ME TELL YOU —



MY BODY
PRODUCES
LUMBER, PULP,
FUEL, AND CHEMICALS.



WE KEEP STREAMS
CLEAR AND COOL.



MAKE HOMES FOR WILDLIFE.



FURNISH FOOD FOR
GAME AND MAN.



KEEP SOIL FROM WASHING
AWAY AND HELP STORE
WATER UNDERGROUND



HELP PEOPLE TO RELAX
AND KEEP COOL



HALP



YUP! WHEN
HE'S GONE
YA SURE
MISS HIM.

SORTA
DEAD, ISN'T
HE?

WARTUCH

MEXICAN DEPARTMENT OF CONSERVATION

June 1959



PENNSYLVANIA
Angler

The Landowner's Stake

In Outdoor Recreation

At the 37th annual national convention of the Izaak Walton League of America, in Philadelphia in April, 1959, I spoke to the delegates on the stake of the landowner in outdoor recreational resources. Here is an excerpt from that talk:

"On many occasions in the last three years I have spoken often of this aspect of the stake of the landowner in outdoor recreation: Just about all of our country's hard coal comes from eastern Pennsylvania, and western Pennsylvania's bituminous coal measures are world famous.

"Directly or indirectly the coal from those two regions has been significantly responsible for America being the great industrial nation it is today. Yet, in the act of producing that immense wealth, our coal operators have released a death-dealing acid upon our waters that has been responsible for destroying a resource that, one day, may prove to be of greater value than the coal they took out of the ground.

"Sulfur is associated with nearly all the coal that is mined. Pockets of it lie in the coal itself, and almost every seam is overlain by a rider of "boney" or "rooster coal" that contains sulfur. Let the sulfur come in contact with water, and then expose it to air, and you get sulfuric acid. Up to recent years there was nothing in law or custom, and hardly anything in mining technology, to prevent the formation of the acid, and even today there is little knowledge of practical and feasible ways to treat it effectively and continuously, once it has been formed. Consequently, in the coal producing regions of Pennsylvania and several other states, notably West Virginia, Kentucky and Ohio, we find literally hundreds of streams devoid of aquatic life, and of little use for any purpose, human or industrial. We have nearly 3,000 miles of such streams in Pennsylvania alone. Most of the acid in those streams is the seepage from abandoned workings, old deep mines whose owners are long gone, dead or departed.

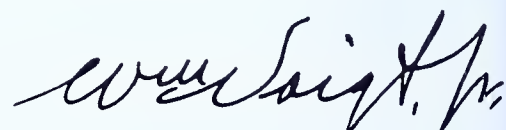
"It seems to be fact that the regions chronically polluted by acid mine waters also are chronically depressed economically, even when other parts of the state and nation are booming. And those same regions

also are chronically deficient in all of the healthful outdoor recreational opportunities that are associated with clean water. What's more, they will stay that way until or unless some genius produces solutions that up to now have baffled our best minds.

"Not much can be done at present about those lifeless streams, but we still have lots of coal to be mined and we'd certainly be fools to want to kill the industry. What we can and must do is try to assure that the industry doesn't kill any more of our living waters. It can be done. Most of the new mining is by the strip method. Where the coal is near the surface, the over-burden is stripped away, and the coal removed with power shovels. By exercising care it can be done without producing acid.

"But what about the disturbed surfaces? These can become perpetual eyesores on the landscape, or they can be restored to productivity in a relatively short time after the mining is ended. But state laws and regulations alone are not enough to achieve this goal. The owner of the surface, if he is aware of his stake—and it is a multiple stake in which recreation is only one of the factors—can insist that the land be returned to surface production. In many cases this is now done, but here, as elsewhere, much remains to engage the attention of the conservationist."

That's the end of the quotation from the speech. One thing more remains to be said: The organized outdoorsmen of Pennsylvania can do much toward assuring that the surface acres are restored to productivity, beyond what the existing state law requires as a minimum, if they will talk with their landowner friends, reach the thousands under whose acres valuable coal measures still lie, and persuade those owners to specify all needed surface restoration when they lease their mineral lands to the operators. This is an approach that has not been tried extensively, at least not in recent years. It seems worth the effort.



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PENNSYLVANIA ANGLER

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COMMONWEALTH OF PENNSYLVANIA
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JUNE, 1959



VOL. 28, NO. 6

J. ALLEN BARRETT, Editor

JOHNNY NICKLAS, Photographer

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THE COVER: Dragon Fly sitting on top of bobber, surrounded with lily pads.

Photo by Johnny Nicklas

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NOTICE: Subscriptions received and processed after the 10th of each month will begin with the second month following.



. . . Rest for bones grown weary.

About a year and two months ago, under the by-line that has become an institution in the *Philadelphia Inquirer*, John M. Cummings wrote the following, in part:

"In the eastern part of the State, the season (trout) is not considered officially launched until the annual convocation of the Hazleton Pickerel, Fly and Worm Fishing Association of Allentown, Pa.

"This takes place at the Tall Timbers Camp of John S. Wise, Jr., atop the Poconos. Early May is the chosen time for the ceremony of wetting a line . . .

"Time was when the gentlemen comprising this distinguished organization were as alert as the next in responding to the clarion call of the trout on April 15. With the passing of the years, they have discovered that the sun is higher and warmer in May than in April. Streams are not so turbulent and new green leaves are all around.

"They learned, too, that more than catching trout is involved in trout fishing. Sitting in the sun on a dry log contemplating the beauties of awakening nature has its compensations, not the least of which is rest for bones grown weary."

The membership and the guest list of the HPF&WFA reads like a "Who's Who" of eastern U. S. business, commerce and industry, over the last half century. As noteworthy are the titles of its officers. Not president, vice-president, etc., like in most other organizations.

The HPF&WFA's officers are, or were, originally all John's—John (just plain), Big John, Little John and Demi John. But not necessarily in that order as to rank.

Demi-John, partly because Tall Timbers is his and partly because he has just outlasted all but one of the original cast, is most certainly now the tall turkey at the trough. And Demi-John has been John S. Wise, Jr.,—"Ol' Man Wise." He is fast becoming a legend, a state that's fully deserved by virtue of his four score and almost two. But a living legend.

As of all legends, tales are being spun, and all true up to now. The Paul Bunyanish variety will come later. And they have taken limerick form like this pair:

*Ol' Man Wise, near eighty-two
Remains quite hale and hearty.
Ne'er misses a chance
To take in a dance
Or sip at a cocktail party.*

*

*Ol' Man Wise near eighty-two,
To retain his vigor and vim,
Each morning will take
To his Pocono Lake
For a dive and a splash and a swim.*

How he has arrived at his present pile of years and still wears down many who are his juniors by far, and the incidents that moulded the man, would take a lot of telling. But the few snatches one can

Ol' Man Wise

By C. ROBERT GLOVER

Photos by Johnny Nicklas

glean by just listening to reminiscences and the banter of friends and family are revealing. Like his first fishing trip into the Poconos back in 1887. To tuck it under his belt he traveled with his dad from Philadelphia to Bethlehem by train, then to Henryville in Monroe county by horse and buckboard.

Or around the turn of the century, of fishing jaunts from Hazleton to Wilkes-Barre to White Haven, again by train. Then the last leg to Wagner's Run, east of Blakeslee Corners—that's right, again by horse and buckboard, across what is now known as the Pinchot Trail to the old Laurel Inn at Pocono Lake.

That was in his early days in the field wherein he later became boss man of over 6,000 people, whose pay checks were labeled Pennsylvania Power and Light Company.

And here's another limerick apropos:

*Ol' man Wise near eighty-two
With Power and Light in his past
Now looks forward each day
To the trout he will play
That rise to the flies he will cast.*

Predating that, however, he mixed boating with his fishing, which gave rise on one occasion in 1897 to an unscheduled swim—the time when the 8-oared shell of the University of Pennsylvania varsity crew sank in the choppy waters of the Hudson River while matching strokes with Cornell, Columbia and others. One J. S. Wise, Jr., was its coxswain. In 1898 he coswained the 100% victorious Pennsylvania varsity crew.

Before and after college he engaged in many races with sailboats. Sailing is an art in which he still indulges and quite proficiently.

*Ol' Man Wise near eighty-two
Is at home on a stream or a lake
On the lake he'll be sailing
On the stream he'll be flailing
A fly with a trout in its wake.*

The high point in his sailing log, however, was a ten-day cruise, with his fishing pal, John R. Sharpless of Hazleton, Pa., and their four sons, along the New Jersey coast. Throughout, they lived off the land—the sea, rather—subsisting on fish, oysters, crabs and clams they could catch, and vegetables and fruit they could snatch from passing truck boats. They touched land only to exercise and replenish the supply of fresh water.

A little known chapter in his sailing-fishing career were those few early years during which he pursued only the finny creatures of the salt water. Nearly every species of marine fish common to the eastern seaboard graced the decks of his boats, except the whale. And that doesn't count he contends, because a whale is not a fish. Included was a 12-foot shark caught in the summer of '96, off Ocean City, N. J. Bait: a quarter



. . . Dams, deflectors and rip-rap—still another project.

of beef. Method: trolling in a 26-foot ocean going catboat. Elapsed time: all day.

But that's not the end of that story. He towed it ashore, the fish almost as long as his craft, put it on exhibition, and charged admission. In a week, 254 people paid to see it. There would have been more but by the time word of the monster really got around, its ripeness was such as to overcome the curiosity of his potential patrons. He had to bury it.

And another limerick:

*Ol' Man Wise near eighty-two,
Says the largest fish he caught was a shark.
'Twas a day long bout
Like he now does without
By fishing for trout, as a lark.*

. . . Flailing a fly.



Oh yes, he has hunted—once. That was back in '98 for ducks. He was all nicely tucked in his blind, as tucked as one can be in good duck weather, which at its best is miserable, when a foursome winged in. He drew down on them and pulled—both triggers. When he got up he counted three down and was done for the day. When he learned that his discomfort and pain resulted only in a trio of mud hens, he retired from hunting for good.

That allowed more time for fishing and, as time passed, he delved into its finer aspects. Though he never went in for tying flies—that was left to John S. the III—he, along with son John made a close study of the flies found in Pocono waters and, among other things, came up with an "emergence" table that will stand any fly fisherman in good stead. Though no



... Paths neat and slick to ease travel in his old age.

attempt was made to capitalize on it, they did allow Zeke Witwer, sporting empressario of Allentown, to publish it. With the consent of all concerned, here it is:

Fly Hatch Schedule for Pocono Mountain Streams; (Hatches occur about one week earlier in the more southerly streams of the state.)

Name of Fly	Date
Hendrickson	April 23
Red Spinner	25
Red Legged March Fly	May 1
Orange Stone	3
Grannom	12
Black Quill	20
Early Brown Spinner	21

Pale Evening Dun	23
Dark Green Drake	24
Pale Evening Spinner	25
Ginger Quill Dun	25
Brown Drake	26
Iron Blue Dun	27
Jenny Spinner	28
Fish Fly	28
March Brown	28
Green Drake	29
Grey Drake	31
Orange Crane	31
Great Red Spinner	June 1
Alder	1
Little Black Caddis	1
Whirling Crane	1
Ginger Quill Spinner	2
Grey Quill Dun	2
Dark Blue Sedge	2
Grey Quill Spinner	3
Brown Stone Fly	5
Light Cahill	5
Greed Caddis	15
Spotted Sedge	20
Saw Fly	25
Golden Spinner	28
Yellow Sally	28
White Miller	28
Willow Fly	July 1
Deer Fly	1
White Caddis	4
Green Midge	7
Yellow Drake	11
August Spinner	August 3
Golden-eyed Gauze Wing ..	April to June
Bluc Bottle	All Summer
Oak Fly	May and June
Black Midge	May to September

And that gave rise to this:

*Ol' Man Wise near eighty-two,
With his son spent years checking hatches.
They now know 'em all
From springtime to fall.
It paid off by upping their catches.*

It was probably this activity that launched J. W. into a phase of fishing that, aside from fishing itself, occupied many of his avocational hours when he was a working man. Further, it's an activity which, since retirement, just about constitutes his vocation, if managing a 600 acre lake and 22 miles of streams can be called a vocation, when there's no pay forthcoming.

That might sound as though his profession was in the field of biology. But like the men of the current cigaret commercials, what seems to be is not the case. J. S. was an engineer. graduated from the Engineering School of the University of Pennsylvania in 1898, then

an administrator. And as is the wont of any good administrator, when a particular talent is needed, it is searched out and the counsel proffered is followed.

He learned early that before fishing could be improved, the watershed, the stream channel, then the stream's food supply had to be improved. On the waters in his charge, he set about and accomplished all three. Improved fishing followed naturally.

In the course of things, the "freestone" nature of his Pocono waters was partially altered with the application of stack dust from the cement plants in and around Allentown. The alkalinity thus added was a boon to plant growth and the food productivity of his streams. In this he was trained by Dr. Francis Trembly, Professor of Ecology at Lehigh University in Bethlehem, Pa., and also a fishing waters consultant.

In another project, the natural propagation capacities of his streams were improved with the establishment of spawning beds. Stream gravel was brought in for this purpose.

Much earlier, he was not satisfied that his streams were graced with the variety of insect species they could harbor. In an attempt to rectify that presumed deficiency, larvae laden water plants from other locales were introduced. Result: no less than three new insect hatches. His preceptor in this was Dr. Wilson Lyte of Allentown, Pa., a great biologist in his day.

Dams, deflectors, and bank rip-rap were still another project. The benefit was double-barreled. Food productivity was further increased as was fish carrying capacity.

Nor did stream sides escape his attention. He was torn between the desire to make travel afoot easier along the streams and the awareness that an abundance of stream side vegetation is an important factor in maintaining lower water temperatures, in providing hiding and resting places for trout, and, by the insects they attract, in adding to the stream's food supply. The dilemma was resolved by cutting good paths well back from the streams. J. S. says he did this to make things easier in his old age.

Ergo, another jingle, to wit:

*Ol' Man Wise, near eighty-two
As a fishing facility sage.
Cut paths neat and slick,
'Long Tunkhannock Creek,
To ease travel there in his old age.*

There are some who not only marvel at his excellent state of health and vigor, but they actually envy it to a point where he occasionally becomes



. . . He's a trout fishing whiz.

the butt of "second childhood" buffoonery. And what happened to him last winter while visiting kith in California didn't help matters any. Let's allow another jingle to tell that story:

*Ol' Man Wise near eighty-two
Thought the west for his health was quite foxy
Imagine his plight
When his doc shed the light
On a rash that became chicken poxy.*

With it all, he still enjoys night life. For as long as his guests will listen he'll entertain them. Among his prized possessions are six sets of Swiss bells that allow an accompaniment in any key. He can really play them, and well. He is also expert with the harmonica. And if there is no one else in the party with musical talents, he'll roll out the record player and accompany it—with bells or harmonica, take your pick.

But that's the only kind of night life about which J. S. W., Jr. concerns himself. And if he were to pen an appropriate jingle on that count, it would probably go something like this.

*Ol' Man Wise near eighty-two,—
Years of age, that is.
Never responds
To the wiles of the blondes,
Instead he's a trout fishing whiz.*

Fly Tying

... via simplified methods

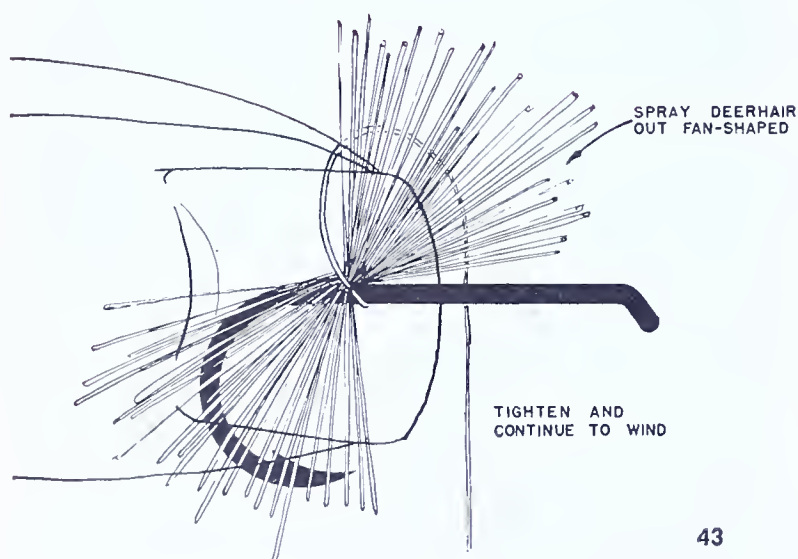
Part 6 (Concludes Series)

By **GEORGE W. HARVEY**

Associate Professor, College of Physical
Education and Athletics
The Pennsylvania State University

Illustrations by James E. Cartey

BASS BUGS



43

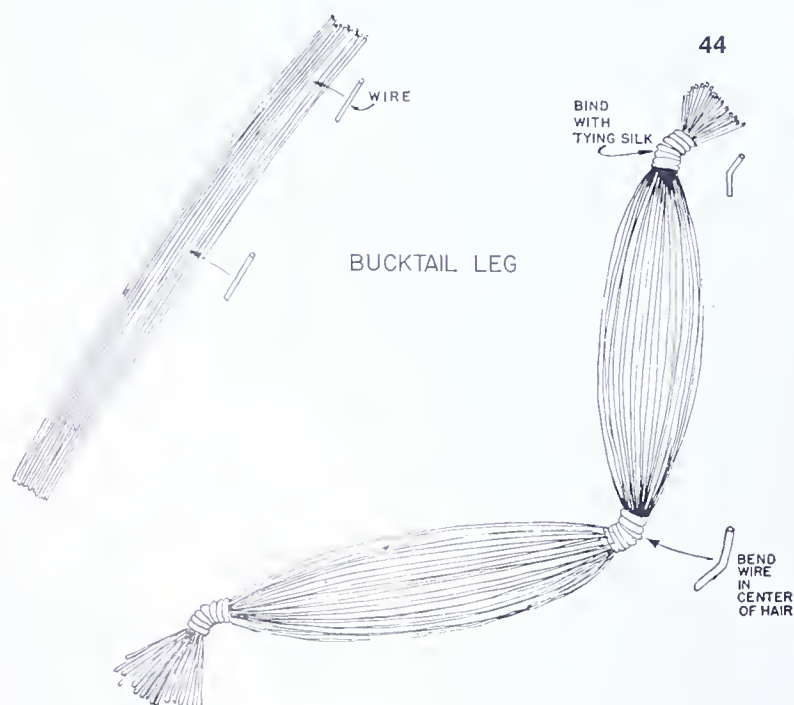
THE name Bass Bug is quite misleading to the tyro. He usually associates these lures with the large-and-small-mouth black bass. It is quite true these lures were first constructed to take bass; but now they are universally used for all species of fresh or salt water

fish that will take a lure on the surface of the water. Considering the great number of fish that will strike these large fly-rod bugs, it is only natural there should be a countless number on the market today.

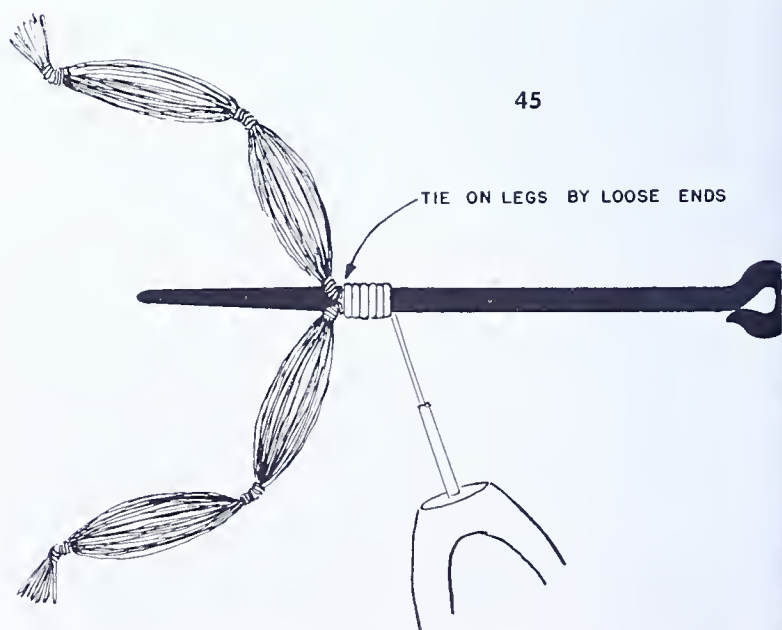
There is one characteristic which distinguishes the "bugs" from fly-rod plugs. Hair or feathers used separately or together are part of the construction of the "bugs," whereas fly-rod plugs are usually made conspicuous by their absence.

Any fly tyer who is able to tie trout flies will find the bass bugs quite simple to make. Even though there are many different patterns, the techniques of constructing these various lures are quite similar. In this article I will cover only hair-bodied and cork-bodied lures. They are typical examples and the tyer who can tie or construct the ones illustrated should be able to imitate any of the others without much difficulty.

There are a few important fundamentals that should be remembered when making "bugs." First, be sure you have sufficient hooking space. By this I mean



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plenty of space between the body and the barb of the hook. If too little of the gap of the hook is exposed, it is very difficult to hook the fish. In addition the bug, in most cases, will not ride as it should with the hook in the water.

When tying "bugs" for your own use construct them so they will work well with the rod, or rods, you intend to fish with. There is nothing more annoying than to try to fish with bugs so large they cannot be manipulated or cast properly. Beginners commonly make this mistake.

If you are duplicating a lure, be as exact as is possible. No doubt the original was satisfactory in balance and action and any slight change may ruin the action or floating qualities. Of course, many lures can be improved upon but the beginner does not yet know the proper proportion and the mechanics of construction.

Hollow Hair Bugs

Antelope, big horn sheep, caribou, deer, elk, moose and reindeer all have hollow hair that can be used for hair bugs. However, one must remember that all the hair from any one hide does not spin on equally well. This is especially true with white tail deer hair. Select only the coarsest hair. Hair from the neck and back is quite fine and nearly impossible to spin; but is excellent for the wings. Beginners should remember that any hollow hair will spin easier on the bare shank of the hook than it will if the shank is covered with tying thread. The size of the tying thread one uses is usually determined by the size of the bunches of hair to be spun on the hook. The more hair one uses, the heavier the thread must be, and vice versa. Be sure the thread is heavy enough for the work you want it to do. It is well for the beginner to practice spinning on the hair before starting to tie hair bugs. Practice until the hair spins on smoothly and evenly around the shank of the hook. Diagram No. 43 illustrates how this is done.

First secure tying thread at the bend of the hook, cut a small bunch of hair from hide and hold on hook as illustrated. You should spread the hair out into a fan-shape by shifting thumb and finger. Now take one or two (I prefer one) loose turns of tying thread around hair where it is in contact with hook. Draw up on the tying thread until the hair starts to flare out, then let go of the hair and quickly make several more turns passing the thread among the hairs. Now wind tying thread to the front of hair. Next, hold at rear of spun hair with thumb and finger of left hand to keep hair from moving on shank; then with thumb and finger of right hand push hair together so that it will be as compact as possible. Repeat this process until shank of hook is covered or until you are satisfied you have mastered the technique.

Diagram No. 44

This diagram illustrates one method of making legs for a hair frog. Here deer tail hair is used. Select hair long enough for the legs, then pull out all short hair and even up the long ones. Take a piece of spring steel wire and insert in the center of the hair as illustrated. Wind over tightly as illustrated; then lacquer and bend as desired. Some tyers only insert wire in the knee joint, others in all three joints. The illustration shows my preference. This Diagram shows only one leg. Two are of course needed.

Diagram No. 45

Diagram No. 45 illustrates how and where the legs are tied on the hook. Secure tying thread just in front of bend, then lacquer. Now tie top end of each leg to hook. After the legs are secured, one may run the tying thread to the rear of the legs and wedge the thread tight against the legs to make them stand out at a wider angle. This spread, of course, is optional. Cover all windings with lacquer.

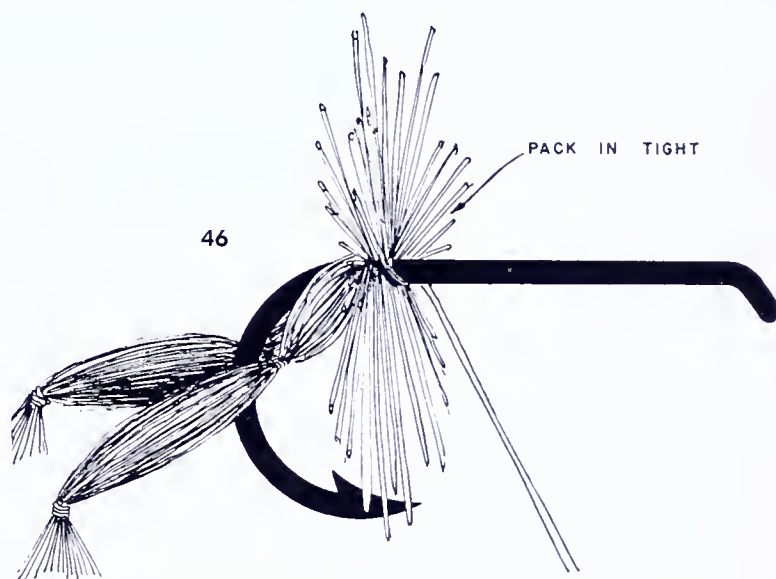


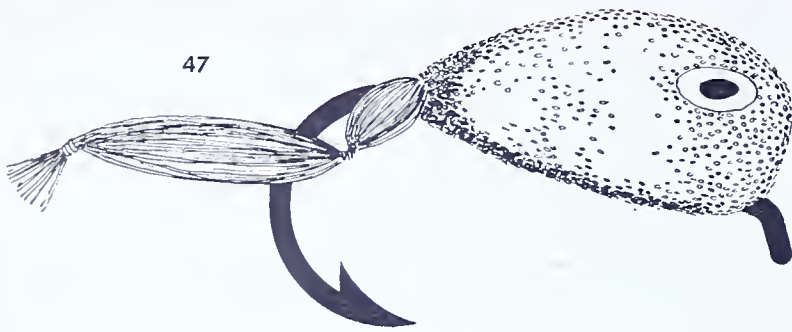
Diagram No. 46

This diagram shows the first bunch of hair spun on the hook after the legs have been tied on. I might add that the first bunch or two of hair is the most difficult to spin on smoothly because of the tying thread on the shank. Be sure the hair is packed tight up against the legs. Repeat, spinning hair until the bare shank is covered with the desired amount. It is a good idea to apply a drop of lacquer or liquid cement to the shank where the hair contacts after each bunch of hair is spun on. This will help keep it from twisting on the shank of the hook.

Diagram No. 47

One may go all out with his artistic sense when trimming hair frogs. I have never found that looks added very much to the fish-taking qualities of the frog. Diagram No. 47 just suggests one shape to trim the frog. Eyes may be added or built up with plastic and painted as desired.

47



small files may be used. I usually shape my slots as illustrated, making the entrance to the cavity just large enough to slip the hook into place. If the bug is to have a tail, tie it on the shank first and cover windings with lacquer or cement. Hump-shanked hooks are best to use for cork bugs as they keep the body from turning on the shank.

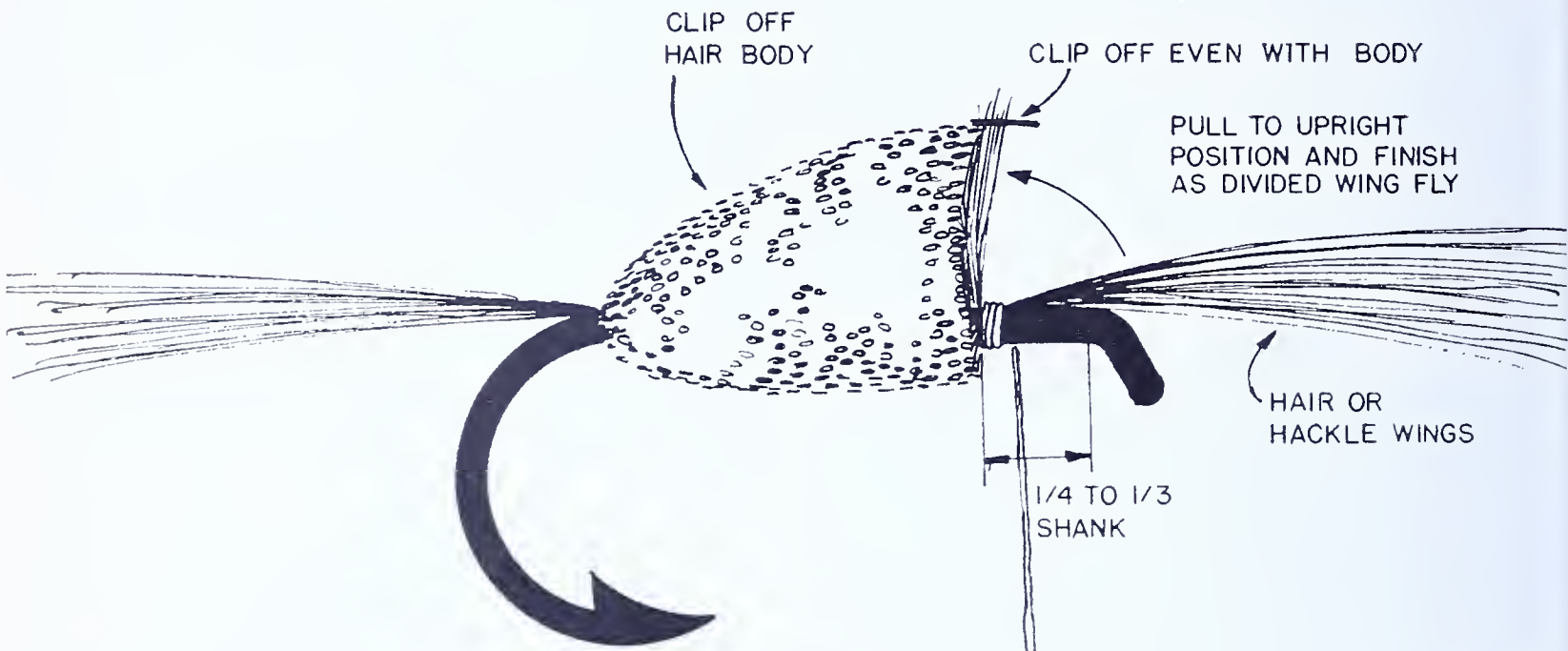
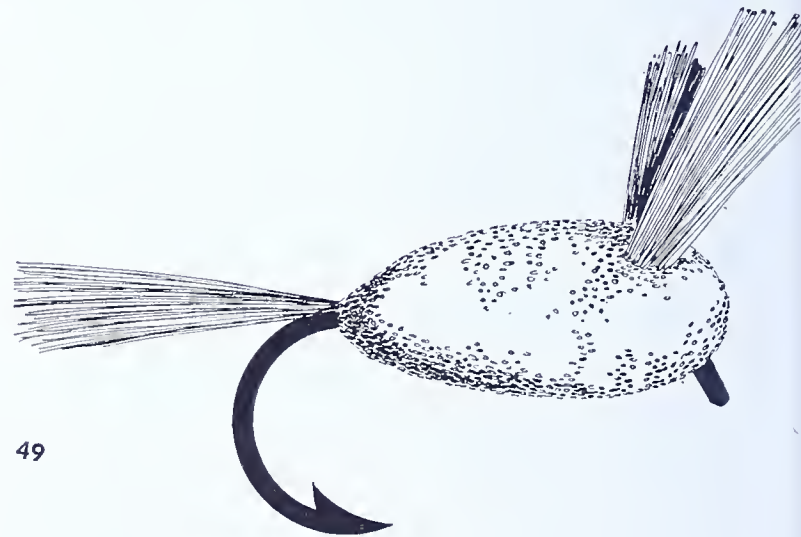


Diagram No. 48

Diagram No. 48 illustrates proportioning of hair bugs. Single tail is tied on, then hair spun on up to one-fourth or one-third distance from the eye. Trim to desired shape. Tie in wings as illustrated. Wings are then divided as shown in Diagram No. 31 (April issue of *ANGLER*). Spin additional hair up to the eye of hook and trim.

Diagram No. 49

Some tyers spin on exceptionally long hair when they get to the point where they want the wings; then when trimming the body, they just leave bunches of long hair for the wings. If the hair is uneven, it may be trimmed as illustrated. The wings may be tied or clipped at any angle on the body.



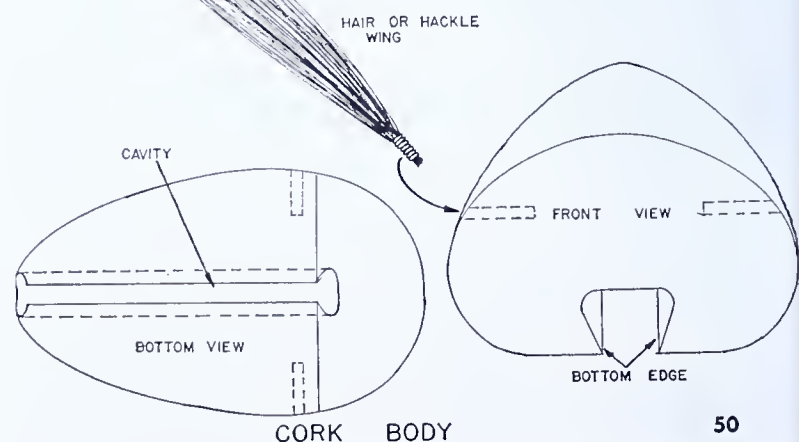
49

Cork Bodied Bugs

Diagrams No. 50, 51, 52

There are many different shapes and patterns of cork bodied bugs. Diagram No. 50 illustrates the steps in preparing a cork body for the hook. Bodies may be shaped by hand from cork cylinders; but one can purchase them already shaped just about as cheaply as the cost of the cylinders.

If you are going to make a number of bugs, it is best to prepare all the cork bodies in advance. Slots in the bottom may be cut with a razor or sawed; or



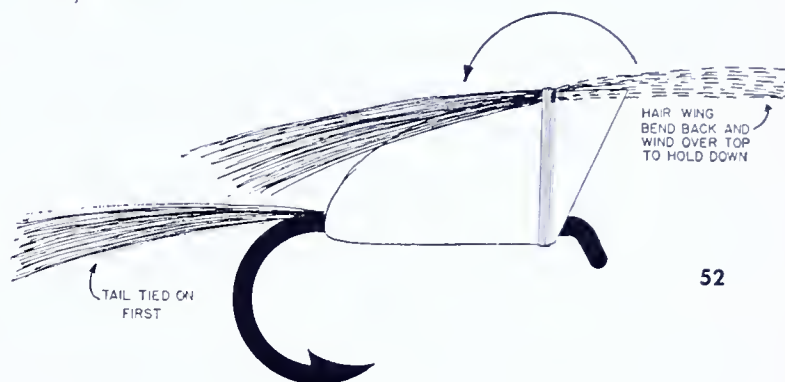
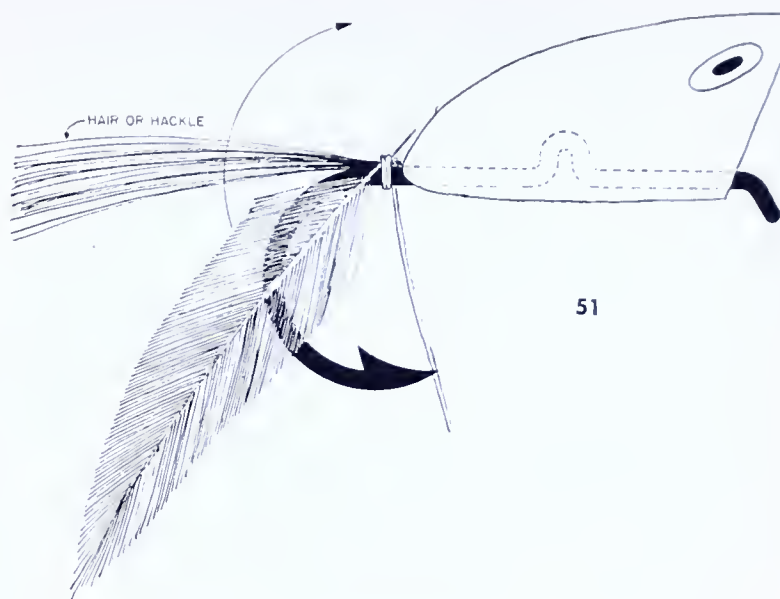
50

Many different cements are available but be sure to use one of good quality. I mix plastic wood and cement together, fill the cavity, then insert the hook. I now pack and smooth off the surface and ends of the cavity. I allow it to set for at least twenty-four hours and then smooth off the surface with sandpaper. If the surface of the cork is pitted, it should be given a coat or two of filler. Some fill the pits with plastic wood and when dry, sand again. Paint or spray with desired color. If the pattern calls for wings, tie them on last; then lacquer windings. Small holes may be drilled in bug in any position desired and wings of hair or feathers inserted. Fill cavities with cement before inserting wings.

Spent wings that are too long and heavy are very difficult to cast. I have seen some that would actually spin enough to twist the leader.

Upright wings that are too long and heavy will make the bug topheavy and it will not ride with the wings up in the air. In addition, this bug will be very difficult to cast.

In concluding, let me suggest that the beginner had better keep his bugs on the small side. They are simpler to tie or construct, will be easier to cast, and more enjoyable to fish.



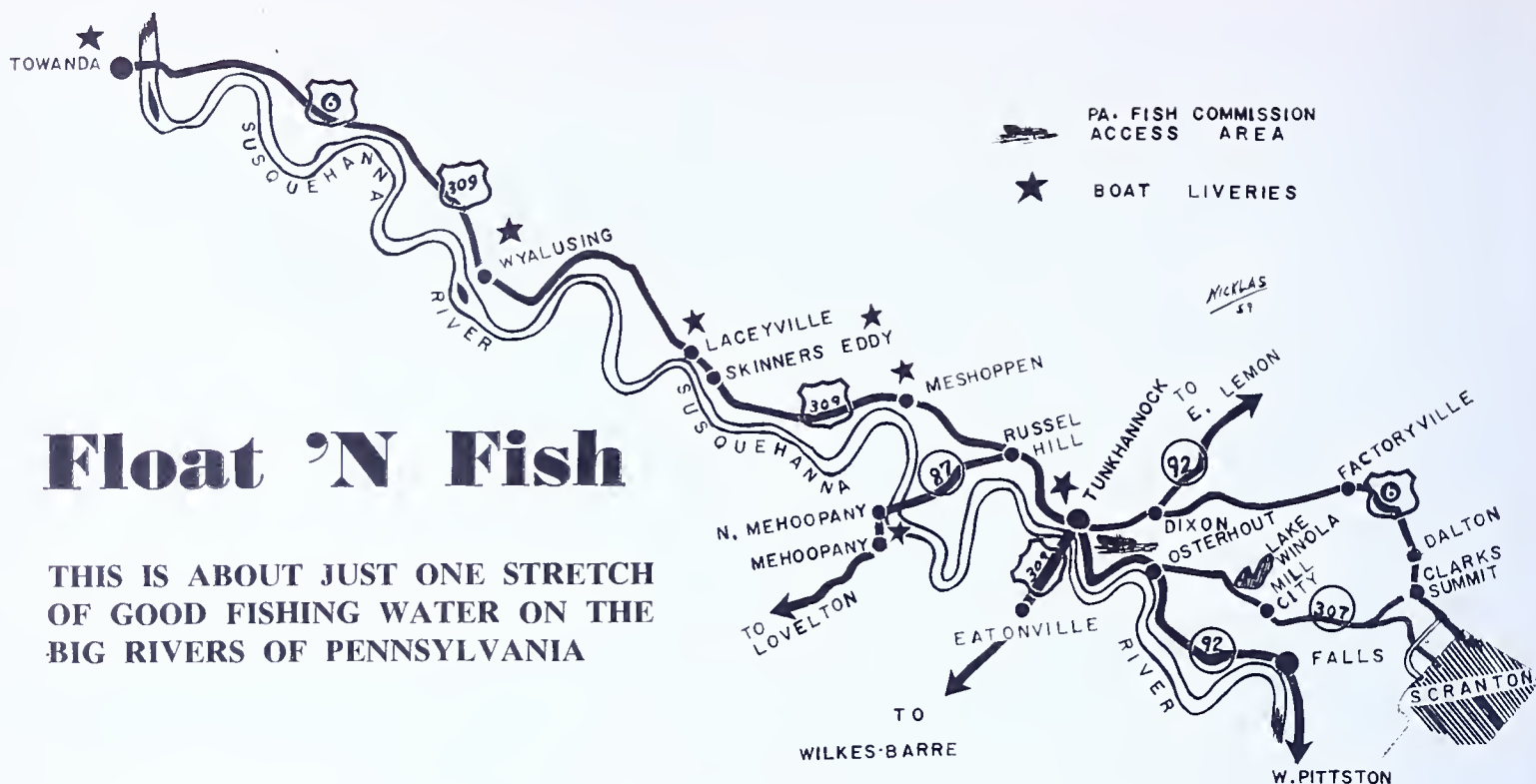
ANGLER QUIZ No. 9

By Carsten Ahrens

Lures, Baits, etc.

- | | |
|--------------------|--|
| — A. Hellgrammite | 1. Simulates a floating insect. |
| — B. Perch Bug | 2. Devices that attract by twisting, wiggling, or whirling. |
| — C. Wet Fly | 3. Simulates small fish, frog, etc. |
| — D. Dry Fly | 4. Larva of Dobson Fly. |
| — E. Natural Baits | 5. Popper. |
| — F. Goof | 6. Concoction for carp. |
| — G. Plug | 7. Larva for dragonfly. |
| — H. Doughball | 8. Worms, minnows, frogs, crayfish, crickets, grasshoppers . . . almost anything smaller than a squirrel, usually alive. |
| — I. Spoons, etc. | 9. Simulates a nymph of a water insect. |
| — J. Bass Bug | 10. Salmon egg cluster. |

Answers on Page 25



Float 'N Fish

THIS IS ABOUT JUST ONE STRETCH
OF GOOD FISHING WATER ON THE
BIG RIVERS OF PENNSYLVANIA

by Frank Stout

It was a warm day last June. But not for that reason alone, as the boat drifted lazily southward on the North Branch of the Susquehanna River, was I in a real sweat. I just couldn't make up my mind what to do next.



Photo by W. Boyd Tobias, reprinted from January '59 ANGLER.

ELEVEN SMALLMOUTH bass and one walleye taken from the North Branch near Towanda, and friends.

I could tie on a hellgrammite and let it drift in the deep water. I could cast spinning lures into the shallows and reeds along the river banks. I could hook up my fly rod and try surface poppers or deer hair bugs. Or I could simply put my chin in my hands and let my eyes and mind fill up with the mountains on both sides of me, the hawks sweeping overhead, and the river bending mysteriously out of sight before me.

This is the North Branch of the Susquehanna River between Towanda and Tunkhannock, a stretch of 50 miles and thousands of acres of water which could support 20 times the number of fishermen who now use it, and still be uncrowded.

I was making a simple 10-mile trip this June day. It cost me a mere \$3 and I hardly had to use the oars of the sturdy, flat-bottomed boat, except to steer. I never had it so good, and anyone can do it. The \$3 covered boat rental and trucking.

You'll find fishing thrills along the entire route—smallmouth bass that leap the instant they feel the hook; stubborn walleyes that battle powerfully in the deep water, and an interesting variety of panfish. If you want to lug a bow along, you'll find carp by the hundreds wallowing in the backwaters formed by jutting land. And if you want further diversity, take along your shotgun and crow caller. They will also sharpen your shooting eye.

Here are a few general directions on how those not familiar with Northeastern Pennsylvania, might reach these waters. Once in the vicinity you'll ask questions for specific locations.

Let's start at Scranton, whether you're dragging your own boat on a trailer, or intend to rent a boat for a trip. Take Route 6-11 out of Scranton, north. It's a good, four-lane highway. At Clark's Summit, seven miles out of Scranton, you'll bear left at the second traffic light to follow a two-lane blacktop road to Route 307 through Mill City and Lake Winola to Tunkhannock. Or you can go straight through Clark's Summit, continuing directly north on Route 6-11 another eight miles until you reach Factoryville. There the new Route 6 leaves Route 11. This new Route 6 is a two-lane cement road that takes you seven miles into Tunkhannock. Now, you're ready for the river. You've arrived.

At Tunkhannock you'll find a Fish Commission-owned access site with parking facilities and a launching ramp. You can put your boat in here and motor upriver as far as you like, drifting downstream for your fishing. You'll need at least a 5½ horsepower motor to negotiate the upstream current.

If you plan to rent a boat, look for Bridge St., in Tunkhannock. There, directly beneath an iron bridge you'll see boats for hire. Bait is available here also. If you have no motor you can fish two big stretches of water near the bridge.

Now, let's return to Route 6 again. About two miles north of Tunkhannock, to your left, you will see signs pointing to Calvert's Landing. A blacktop road leads you directly to the river and the landing. Boats are available here for float trips, or for fishing the big pools on either side of the landing. The price for a float trip (three dollars) includes trucking the boat upriver to Mehoopany. This float trip covers about seven or eight miles of the best fishing in the Susquehanna River and you can make the distance in three to seven hours, depending on whether you're in a hurry or want to loaf along. That's up to you. There is very little fast water in the stretch and even an inexperienced boatman can handle it easily, using common sense.

Above Calvert's landing you'll see Route 87 to your left, marked for signs to Mehoopany. Following this route will take you to a large bridge, directly beneath which you'll find boats. Two very large stretches of water here can be fished only with oars, or you can attach your motor for a run upstream.

Now, we'll go back to Route 6 again, still traveling north. The next community is Meshoppen. Boats are rented here and ample signs point them out. The road virtually parallels the river from here to Wyalusing.

The river will be on your left as you drive along.



BEAUTEOUS SUGAR RUN section between Tunkhannock and Mehoopany, one of many scenic sights along Susquehanna River's course.

You'll find boats also at Skinners Eddy, Laceyville, and at several points all the way to Wyalusing and Towanda. Signs direct you, often down good gravel roads to the river shore. The total distance between Scranton and Towanda is a shade over 60 miles on Route 6. It is impossible, of course, to float the river from Towanda to Tunkhannock in a single day without a powerful motor. And this way, you'll have little time for fishing. But this story deals with fishing, so let's get to it:

If you like to try for real lunkers, follow the lead set by old timers on this picturesque section of river. They use hellgrammites or live minnows and let the bait drag slowly behind their boat as they drift downstream, meanwhile casting to either side with spinning lures or casting rod.

Favorite artificial lures, for either spinning or casting, are bright nickel spoons and brass-plated spinners, fished through quiet pockets of water or along the grass and reeds which fringe the shoreline. Smallmouth bass lurk in these shoreline reeds and hit a spinner with a

SHORE FISHERMEN and children try for walleyes in a big pool above Mehoopany.





WORKING a deep pool, close to shore.



HORSESHOE BEND. North branch of the Susquehanna river above Tunkhannock.



THE BOAT-FLOAT fishes the deep water in the center of the river.

sudden wallop that inevitably will surprise you. You'll miss many strikes, for these bass, reared in the river current, are strong and have made an art of throwing hooks on their first leap. Try a 10-pound test line of the new monofilament. It casts well and yet has the strength to hold the big lunkers you may encounter.

When you drift very slowly through the big, lake-like pools which dot the river between Wyalusing and Tunkhannock, try a perch-colored diving plug in the deep water. Bottom-feeding walleyes like 'em, and though they're usually late evening feeders, walleyes often will take this lure near the bottom at mid-day.

Don't leave your fly rod at home. Medium-size deer hair bugs, tied on a No. 6 hook so they are fluffy and ride high, are my favorite top water lures for the river. White is the color which has produced best for me but combinations of white, flecked with black, and yellow, also tease the hard-hitting small-mouths.

The speed of the water is nearly perfect as you drift downstream for fly-casting. If you have a partner who'll handle the oars to guide your course, you've got it made. Deer hair bugs and feathered poppers dropped lightly beside the shoreline reeds entice small-mouth bass all hours of the day. In the evening hours, the big ones move into the shallows. And when you cast, rest the surface lure for a count of four or five. Then twitch it gently. Be ready for a split-second strike and set your hook in a flash. These Susquehanna smallmouths won't wait.

Fly fishing this stretch of the North Branch is exciting because you don't know from cast to cast what your lure will bring into an explosion of water and fins. Bluegills and sunfish are not uncommon and they challenge the smallmouths for flies and deer hair bugs on the surface.

If you're planning a Susquehanna River trip and for some reason prefer not to use a boat, drive up along Route 6 anyway and stow your spinning gear and fly rod in the trunk of your car. Above Tunkhannock you'll find many places where you can walk directly to the river's edge. Hip boots will put you within casting distance of eddies and riffles that hold smallmouths and walleyes. Try a light, brass-plated spinner, cast cross-stream and hold your rod tip high to keep the lure running shallow. Smallmouths will smash it from hiding places you wouldn't believe could harbor a snail.

Most exciting of all, however, is the float trip, whether you do it with your own craft and motor, or merely hire a rowboat for one of the shorter trips. Pack a lunch and a thermos jug of cool liquid so you can beach your boat on a gravel bar for a mid-day respite.

This is a fishing trip to be sure, but if you have room, include a camera. The towering rocks at Wyalusing, where Queen Marie Antoinette planned to seek asylum, are one of the scenic highlights of all Northeastern Pennsylvania. Horseshoe bends in the river above Tunkhannock present vistas of mountains that the automobile traveler never sees even though he drives within a few hundred yards of them.

HOWDY!

Yes sir! That's me—"The Good Outdoor Manners Raccoon."



JOHNNY

*... and that's
JOHNNY HOYES
of Charleroi
Pennsylvania, a
six-year-old school
boy whose entry was
selected from the
48,000 names submitted
and declared the
... WINNER!*



HOWDY

The Pennsylvania Forestry Association and nine other conservation agencies in the state named a first-grade school boy from Charleroi in Washington County as winner in a contest to name a **GOOD OUTDOOR MANNERS RACCOON** that is expected to become as well known in conservation as "Smokey the Bear." More than 48,000 Commonwealth school children competed in the contest.

John Hoyes, of 200 Arlington Avenue, Charleroi, a first grade pupil at the Second Street School, is the son of Mr. and Mrs. Jack F. Hoyes and he won a \$200 U. S. Savings Bond for picking the name "Howdy the Raccoon." John chose the name because the raccoon "Welcomes you to his home, the forest, asking you to obey the rules of a good guest."

In a letter to the 31 other contest winners, Lloyd E. Partain, President of the Pennsylvania Forestry Association, said:

"Soon you will be seeing 'Howdy' along country roads, in parks, and at the many other places where people gather for recreation.

"Howdy's job is to bid you welcome and to remind you to have **GOOD OUTDOOR MANNERS**. In this way he will help us take care of our parks, forests, fields, and streams so that they will remain for the enjoyment of the many generations who follow us."

Commenting on the new educational campaign, the committee said that "wherever careless citizens litter a highway or park; wherever heedless families mess up picnic grounds and camp sites; wherever people clutter streams and lakes with bottles and cans; wherever fishermen refuse to recognize the rights of property owners and other fishermen—there, we hope, will soon be Howdy cautioning them. If our campaign is successful, the public will be saved millions of dollars in maintenance and repair bills and a decided improvement in good manners while fishing, will be accomplished.

"Each day there are fewer acres of land and public fishing waters available for recreational development. Yet each day more people are using the existing facilities. We must take better care of them if they are to last under this pressure."

Participation of the state's school children in this first contest was "overwhelming." "Every county in the state was represented."

Allegheny County led with almost 3,000 entries, followed by Elk (1,926), Centre (1,923), Berks (1,743), York (1,626), Luzerne (1,588), Wayne (1,546), and Delaware (1,524).

Clinton, Lehigh, Forest, Snyder, and Sullivan Counties all conducted contests of their own.

Anyone for Camping?

PACKING·TOTING SETTING UP CAMP



By JOHN F. CLARK

Part Two

The big day has finally arrived, and you are up early in order to get your gear assembled. Most of your equipment is spread out in the garage or down in the basement and now it's time to pack up.

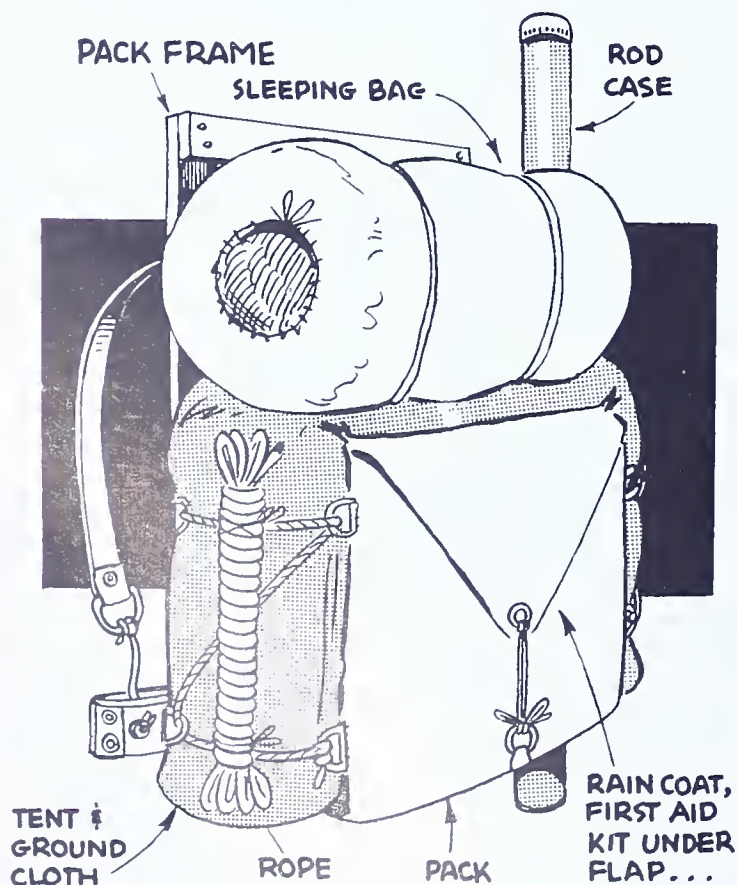
Here's where that checklist comes into the act. Start at the top of the list and mark a big red "X" for every item that you have, but don't mark the items that you haven't rounded up yet. After you've gone through the complete list once, then go back

over it to check for missing gear. Go get these missing items right away, and as you get them check them off your list.

Looks like a pretty big pile of gear doesn't it? And you're probably wondering how you are going to get it all in the pack. Packing is an art in itself and requires a bit of thinking and common sense to do a good job. If you are using a pack frame the first job is to lash the pack to the frame. Tie it tightly, otherwise, when you are hiking, it will get to bobbing and shifting around. Experienced back packers will tell you that a tight compact outfit is less tiring than a loose sloppy one.

The items that you won't be using right away, go in the pack first. (Such as extra socks, handkerchiefs, toilet articles, mess kit, etc.) There are a few space and weight saving ideas: Instead of taking a full roll of aluminum foil, unroll about four or five feet and fold it into a flat square. Some of you are probably wondering how to get a bulky loaf of bread in the pack. Figure it this way; Four campers, half a loaf per camper should do it. Divide the bread up before you leave. And by the way that half a loaf can be compressed into a small area. Sure, those flattened out slices aren't what you are used to eating, but we're interested in saving space. Instead of each camper bringing a complete kit of toilet articles, have one camper bring soap, another toothpaste, the other two could bring a comb, toilet tissue etc.

Some of the food can be made ready before you pack. For example, wrap the potatoes in aluminum foil, then when you're ready to bake them just toss them in the hot coals. Your bacon and butter should be stored in the refrigerator overnight, then when you



are ready to pack them, wrap them in a couple of layers of foil. This will keep them cool for quite awhile.

The items that go in the pack last are those that you might have use for at any time: First aid kit, raincoat, canteen, rope etc. The first aid kit and raincoat can be placed just under the flap of the pack, then if you need them all you have to do is untie the flap and there they are. Your canteen can be worn on a pistol belt around your waist while the rope can be lashed to the outside of the pack.

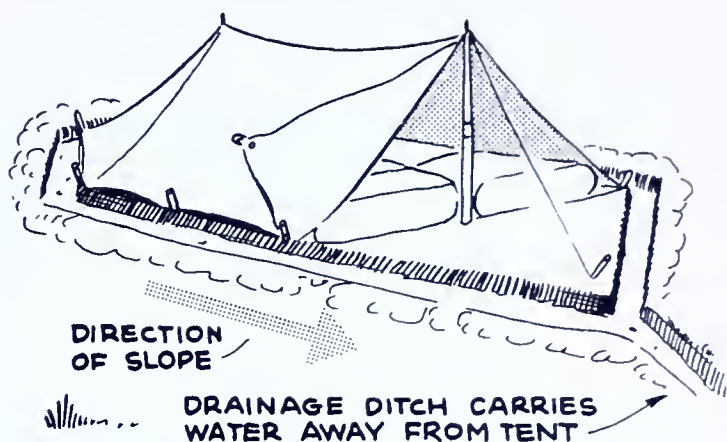
When the pack is full, roll up the tent poles and pegs in the shelter half and ground cloth and tie them, "horseshoe" fashion over the pack. After these are tied down there should be a space left at the top of the frame for the sleeping bag. If you tie everything tightly before you leave you won't have to stop every ten minutes to retie it. The sketch will give you an idea what your loaded pack frame should look like. Even though you used your checklist when you packed it's still a good idea to look around and make sure you haven't forgotten anything.

All set? Then load up the car and let's head for Moose Pond trail. It's a nice clear day, slightly on the warm side, but all in all it looks like a perfect weekend for camping.

Make arrangements with whoever drives you to the trail to pick you up the next day. Then help each other on with your packs. It's much easier to get into a heavy pack if someone holds it for you. Adjust the straps so that the pack fits snugly, and as high up on the shoulders as you can get it. If your pack doesn't set comfortably before you start, now's the time to do something about it. Maybe a little extra padding under the straps or rearrangement of some of your gear. Minor discomforts aren't so bad on a short hike like this one. However, if it were a long back packing trip then those small annoyances can turn into real torture.

O.K., if all the necessary strap adjustments are made, let's hit the trail. Right here most beginners make their first mistake; They take off as if they were going to a four alarm fire. You can get to wherever you are going, in much better shape, if you set a slow steady pace. Nine times out of ten you'll find those speedy characters huffing and puffing like a steam engine after the first quarter mile. Maintain an interval of about twenty feet between hikers. That way you'll avoid getting slapped in the face by low hanging limbs. On this particular hike we're only going a mile and we can probably make it without any stops. However, if you find that you are tiring, by all means stop and take a short break every so often. Take the weight off your shoulders by leaning against a tree or rock. After you've recovered your breath start off again, keeping the same steady pace. When you reach the campsite you'll find that you are less tired than if you

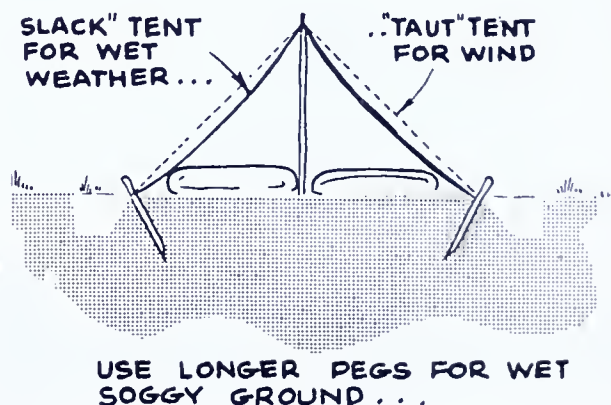
"DITCHING"



had made a "speed" march out of it. You'll also find that when you take off the pack you'll feel light as a feather and ready to whip the world.

At the campsite, stack all the packs and gear in an orderly row. Then start looking around for the best place to pitch the tents. An ideal tentsite is on a slight elevation or mound, never in a dip or hollow. The beginner will almost invariably choose a hollow, and, come the rain, he'll find that he's lying in the middle of a miniature lake. On the other hand the elevated site will allow the water to drain off away from the tent. "Ditching" is another means of draining off surface water. The sketch shows how to do it. After you have picked your site, pitch the tents and ditch them. You pitch the tents either loose or tight, depending upon weather conditions. Loose tent for wet rainy weather, tight tent for dry windy weather. Make up your bunks right away. The waterproof ground cloth goes in first and covers the bottom of the tent, then spread out your sleeping bags. Your extra gear and pack frames are stored in the back of the tents. Once the tents are ship shape, select a firesite. This should be in a clearing away from overhanging limbs. Mark off and clear a circle eight to ten feet in diameter. Then scrape away everything inside the circle that will burn. While one of the campers is doing this the others are gathering firewood and digging a garbage pit and latrine. Dig these outside the general camp area

CROSS SECTION:



and clear a path to them so you won't be stumbling over snags and rocks in the dark. Suggested dimensions for the garbage pit are: 1' x 2' x 2' deep. Latrine. 1' x 3' x 2' deep. Of course these dimensions will vary according to the length of time you are going to be there. At the firesite, pound four stakes in the ground and stack the firewood between them. (Just outside the cleared circle.) If it looks like rain, stretch the tarp over the fire area. (High enough so that you

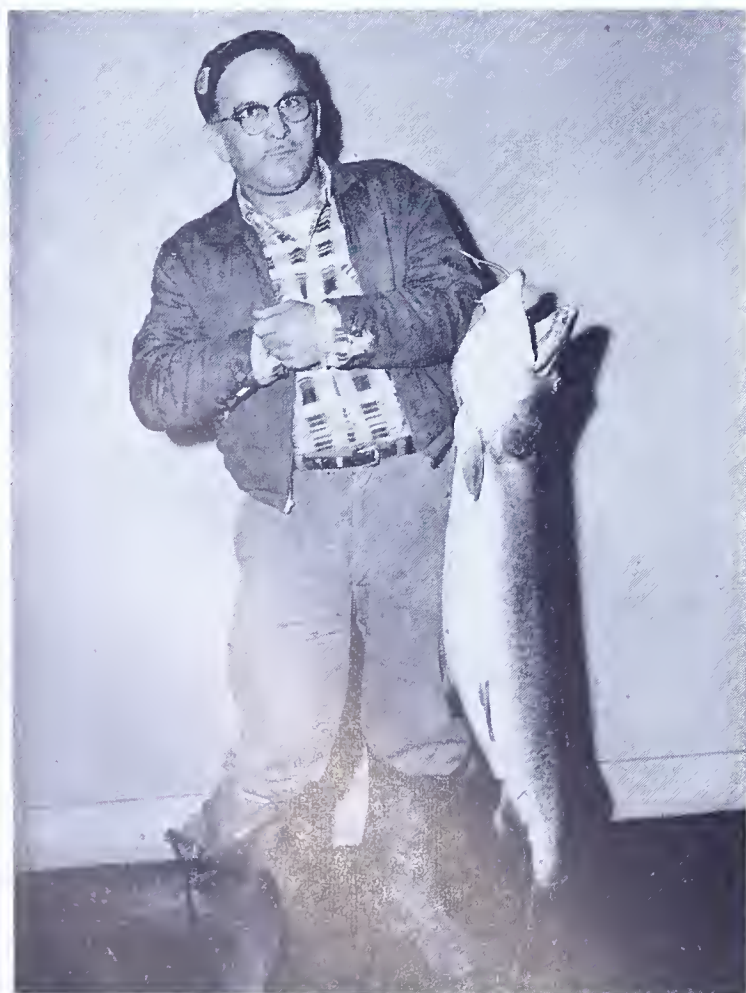
can stand up.) And if necessary, dig drainage ditches around the edges of the tarp to carry off surface water.

The sign of a good camper is a neat orderly campsite. Any gear that you are not using should be stored properly in the pack or tent. Don't scatter your equipment all over the place or you're liable to lose it.

Well, all this activity has worked up a pretty good appetite hasn't it? Then let's get out the cooking gear and food sacks and get supper under way.

Cussewago Creek Yields big Muskie - - -

Evidence that they grow big in the Cussewago Creek in Crawford county is this exceptionally fine Muskellunge caught by Alex Timco of 196 Stevens St., Meadville. The muskie measuring 49 inches long and weighing 35 lbs. was caught on April 16, 1959.

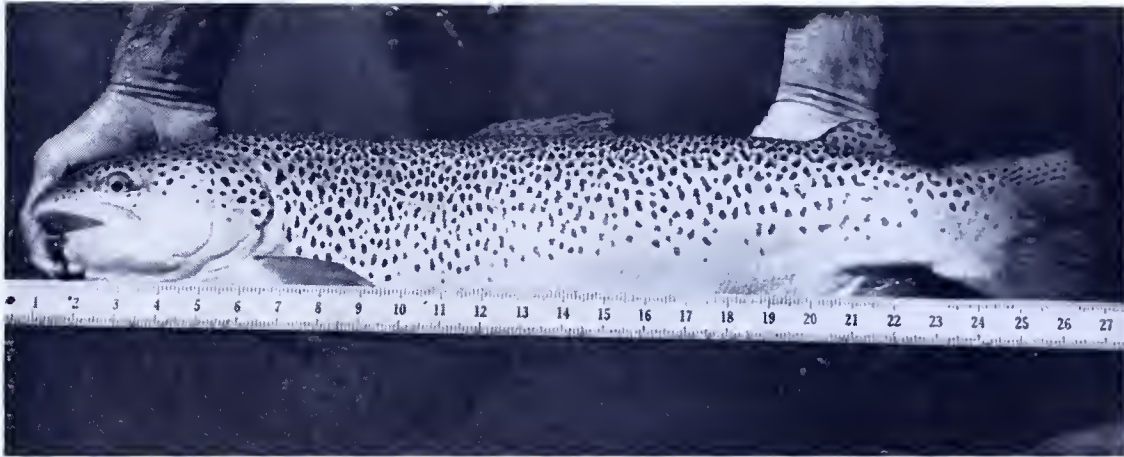


Photos—Graphic Arts, Meadville, Pa.

Big Walleye Snagged from Pymatuning - - -

Paul Deater of 701 Brawley Ave., Meadville, proudly displays large Walleye which he caught in the Pymatuning lake in Crawford County. The fish weighed eight pounds, ten ounces and was taken at about 3 o'clock in the afternoon. Deater used a live minnow.

Nellie



PORTRAIT of "Nellie." The rule hides her distinctive "pot belly" but it does serve to certify her length.

By KEEN BUSS

(Photos by Johnny Nicklas)

No stable of equine thorobreds nor kennel of canine champions is more carefully tended or more highly prized than the bevy of female brown trout breeders that occupy their own special pond at the Benner Spring Research Station of the Pennsylvania Fish Commission.

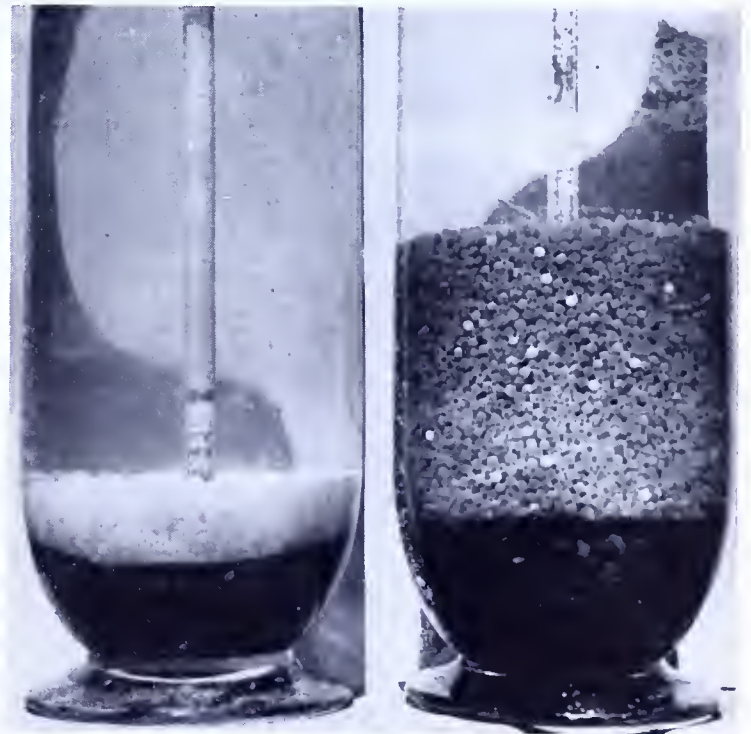
There are five of them. But one is a real star and bears the number 1781 on the tag that adorns her lower jaw. Actually she need not wear that adornment for identification by the station's staff. Her shape is sufficient. It's that shape—a pot belly, to be perfectly blunt—that is the tip-off to the reason she is held in such high regard. So much so that she has become a personality there and given a name—Nellie.

In her last effort during the 1958 spawning season, Nellie produced 20,865 eggs. This certainly is a record, by a comfortable margin, for Benner Spring. That it may be a record of greater scope is reasonable to assume after the following item which appeared in the April 1959 issue of *OUTDOOR LIFE* magazine:

"An 8-year old California brown trout has created considerable excitement in fish culture circles by producing 12,040 eggs at the Mount Whitney Hatchery, a record for California and possibly the nation."

Like several of her sisters, she was originally selected for breeding purposes from a lot of 80,000 trout because of her growth, body characteristics and later, her spawning performance. This was back in 1952. Of that

group, Nellie remains one of five still being retained. She isn't the largest of these six-year old fish at 26.5" in length, weighing 13.4 lbs. Another of the group, when last measured, was 32.5" and weighed 15.6 lbs. However, the latter produced only 8,572 eggs—still a fine performance.



THE HATCHING jar on the left contains the egg production of the average breeder trout. On the right is Nellie's—20,865, by count.

The spawning records of these selected breeders are kept faithfully. Nellie's dates back to 1955 as a 3-year old. Unfortunately, in 1956 her eggs were lost. At that time, pending the completion of the Research Station indoor facilities, the eggs were incubated in a temporary tent and her's were among those eaten by rats which had easy access to the inside of the structure. Nellie's record is as follows:

Age	Length	Weight	Eggs Produced
3 yrs.	19.1"	3.6 lbs.	5,485
5 "	24.3	10.3	14,342
6 "	26.5	13.4	20,865

Even as a 3-year old, Nellie's production was well above the average at Benner Spring, which is approximately 4500. In addition, while her eggs are average as to size, well above average viability has been recorded for her. Viability refers to the number of eggs that develop into healthy fry.

Included in the extra care lavished upon Nellie and her sisters are antibiotic "shots" administered after spawn is taken, as a precaution against bacterial infection—a boil-like lesion that is not uncommon among hatchery spawners.

Pymatuning Set for 1960



Photo by Glenn Hoy

Rules and regulations and plans for the inter-agency management of Pymatuning Reservoir and surrounding public owned lands for 1960 were established at Linesville during an early April meeting of officials of the Ohio Conservation Commission and Pennsylvania's Fish Commission and Department of Forests & Waters. The reservoir is on the Pennsylvania-Ohio border in Crawford county. Approximately one-quarter of its water area lies in Ohio. Regulations governing fishing and other uses of the area have been little changed from those currently in effect and they will continue to apply similarly to residents of both states. Present at the session and pictured above are: (seated left to right) William Voigt, Jr., executive director Penn-

sylvania Fish Commission; Ralph Ferris, Pennsylvania Department of Forests & Waters; John Z. Pelton, and Clarence F. Clark, Ohio Division of Wildlife; Gordon Trembley, Chief Aquatic Biologist and Dr. Albert S. Hazzard, assistant executive director, Pennsylvania Fish Commission.

Standing left to right: J. L. Zettle, Linesville Hatchery and Shyrl Hood, Erie Hatchery, S. Carlyle Sheldon, Northwest Region Warden Supervisor, Pennsylvania Fish Commission; Lew Grubb, Ohio Conservation officer; Ray Hoover, Crawford County Warden, Al Larsen, Erie biologist, and William Daugherty, Northwest Fishery Manager, Pennsylvania Fish Commission.

On Plying the Dry Fly

One thing I've got to say about this ancient and honorable method: it sure can set a man to thinking

By H. N. SCHOTT

Yes, dry fly fishing is a demanding sport. To practice it successfully, a man must be able to handle his tackle better than most. He must be capable of stealth and patience, and he must be observant. And, a thorough knowledge of that little sub-cosmos that is a trout stream is helpful indeed.

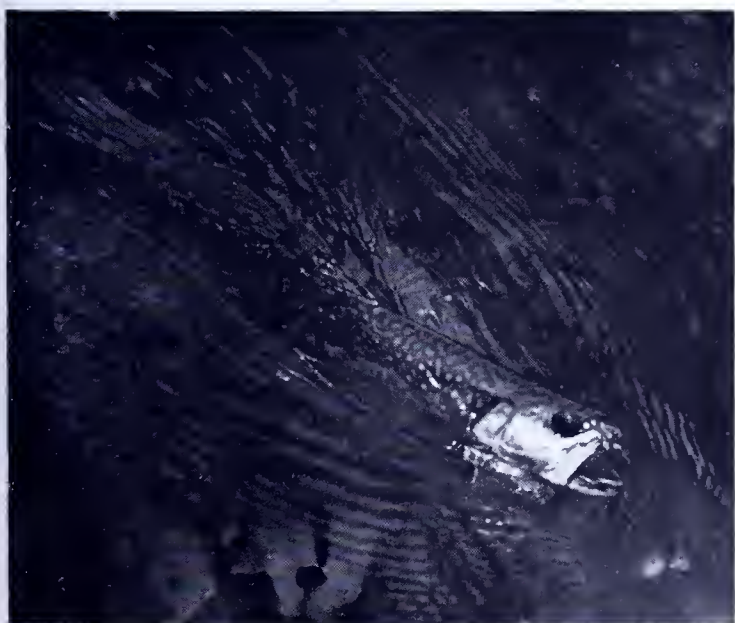
But, true as all those legends are, it is equally true that fishing with a dry fly is not the most difficult form of angling. Drifting a nymph so that it moves utterly naturally on a line that is still taut enough to register a strike is as delicate a game. And a man who has bent himself against a marlin's surly humours for five hours or so will speak about an entirely different range of qualities: stamina, the capacity to endure punishment and the like.

Why, then, has the art of the dry-fly man become the standard against which the techniques of other men are measured? Perhaps the answer lies in that odd word that has been used to describe him: purity. If a man decides to restrict himself to the lures in question, he places obstacles in his own way; and yet, in return for this self-imposed limitation, we honor him with the title of Purist.

I think that this tribute, despite the humor that



WHICH SHALL it be, Adams, Light Cahill, Black Gnat? Maybe a hatch will come along and give us the answer.



DRIES ARE seldom taken deeply, which made it easy to release this brookie and be sure he'd live to rise again.

About the Author

With a background of some twenty years fishing, H. N. Schott after finishing school and college began writing. His articles have appeared in Esquire and many of the outdoor magazines in America. For the past three years he has been managing Editor of Fishing World published by the Allsport Publishing Corp. of New York. Add a grab-bag of assorted freelance writing and editing chores and one has a pretty complete synopsis of the career of Hal Schott. Basically, he is a fisherman and pays heed to the world in which the grand art takes place. Hal's life is further embellished by a wife and son and an enormous shaggy dog.

—Editor



THIS KIND of water, varied, slightly rippled, cries for a floater—and angler obliges.

often goes with it, makes a great deal of sense. In a way we seldom pause to ponder, the purist's approach to fishing provides all sportsmen with a crystalline image of just what it is we are all doing. We are going about things the hard way, as all the clever surveys that show how much we pay per pound for fish and game amply prove. In short, when we hunt and fish we are, for perhaps the only time in our lives, doing something for its own sake. And the dry fly, that lovingly fashioned bit of fluff bouncing down the grand concourse of a mountain stream, is a testament to the basic motive that moves us all.

If the fish refuse to rise, the purist voluntarily contents himself with the mere sight of a budding aspen grove, or a raven's clack far away in the woods, or maybe just the endless pull of the current against his legs, the stream itself, in which, for the moment, he and his quarry dwell together.

Of course, this appreciation of a purist's austerity of purposes is not meant to serve as a model for every man. But when the vernal equinox is greening and sweetening the land, and the great hatches are beginning, all true lovers of trout-bearing mountain streams find the air is like the juice of the juniper tree (at least for those who never could cultivate a taste for champagne). In fact, for this season at least, that daft old incorrigible purist may even have a practical word to be said in his favor!

I take myself as a case in point. As a confirmed slinger of anything the situation calls for, I must admit that I've been outfished by purists on many a day during this season of so many gossamer wings on the water.

Anyone who has seen a 21-inch rainbow come crashing down on a #14 Cream Variant will be hard put to forget it. And I've seen it, only the darn clump of feathers wasn't attached to my line at the time. Matter of fact, my little wobbler was hung on a rock at the moment in question, which may help to explain why I've become a bit of a purist myself of late—at least when it comes to the trout of spring and

early summer (autumn, too, for that matter, with its own range of wonderful scenes and its own kind of nip in the air.)

Sure it takes a while to learn how to do it. I remember a day on the Beaverkill last May when a couple of us beginners were discussing this very point. I'd just complimented my companion on the way he could whistle out a line to the very spot he wanted to hit, and on the plump brown whose tail was protruding from his ample creel.

"Yes," he admitted with a twinkle in his clear blue eyes, "I'm beginning to get the drift of this darn fool business."

"How long you been at it?"

"Why, I don't guess it's been more than thirty years, give or take. 'Course, I fooled with all kinds of fishing for twenty years or so before that, but that don't hardly seem to count any more . . ."

But, lest this renew the trepidation felt by many otherwise proficient anglers when plying the dry is suggested, let me make a flat assertion: when I decide to keep my feathers dry, I never have a bad day on the water.



PURIST, TEXTILE executive and life-long lover of the outdoors, that's Dwight Davis left, passing on the pattern and technique that put that brownie in his hand.

Never been skunked? I didn't say that. I've gone fishless lots of times, but I've always come home with something, even if it's "only" a sense of relaxation and renewal that goes clear down to that sector of a man's bones where the marrow is made. And the explanation, or at least part of it, is pretty simple: if a man decides to go wandering down a lovely river fishing exactly as he pleases, he's already pretty darn relaxed, and the rest follows naturally from that.

What I'm trying to touch on here is the real reason for fishing with dry flies, the spirit of the sport. Many

a book has been written on the fine points of actual angling technique involved. Most of them are pretty good; largely, I guess, because a man really has to care to produce a whole book about such a fine but specialized subject.

Cast upstream and across and avoid—if you can—both slack and drag, is the way the advice usually runs, with myriad small refinements suggested here and there. It's about the simplest—and truest—advice an angling man is apt to run into. The exceptions depend on comparatively rare circumstances; and knowledge about where to place that quartering cast, and what offering to choose and the size of it, comes mostly from a long, affectionate and attentive study of trout and water.

So, let's say we have the gear we need—good fast rod, line to match it and flies and leaders appropriate to the water we intend to fish. We know how to use this prized equipment, and we leave for streamland in the morning. Assuming all the external arrangements have been made, maybe there's an additional factor to consider, a pledge we can make to ourselves.

Suppose we put it this way, more or less: This time, I will remember that I'm going out there to that stream or lake just because I want to. There's no need to do it. If I want fish I can get 'em from a market; and, on the other hand, I don't need a fishing rod to get a lungful of piney air or net a sunrise coming over the misty hill. All these things are part of the whole experience of angling. If I manage to fool a big rainbow with my tinsel and feathers, fine! If a beaver topples a tree in my presence, so much the more amazing. But if neither thing happens, nor anything else quite so exceptional, I'll still remember why I went there, which was simply to be there, quietly, with all my doors and windows open.

Of course, you don't have to fish with dry flies to see the wild world, love it, and drink in its colors and

contours. But it helps. We are, after all, creatures of habit, and this kind of angling teaches us some good ones. A dry flyist grows more intimate with the great cycles of life, quick and subtle, that move through the water and the neighboring land. He notices the strange metamorphosis that varied insects go through, and learns to predict them in relation to magnolia blossoms and flowering cherry trees. And there can hardly be more rapt and self-forgetful contemplation than that demonstrated by a good dry fly angler as he watches his chosen lure come swinging down with the current.

Sure, anyone could pay more attention, be more content just to exist in the outdoors. Only we forget. If people get in our way, or the fish don't cooperate or a swarm of gnats come after the rain, we curse our luck, or drive madly off to a new spot. I've fallen prey to this silliness, and so has every angler I've ever talked to.

Once in a while, though, I come across a fisherman (a Purist, likely as not) who has gotten past that stage, and such men point the way to what could lie ahead for all of us. He remembers why he fishes and, to quote a long-gone poet, "loves the moments as they pass."

After all, that's how life itself passes, in a succession of Nows. It doesn't lie back there in the musty memory vaults where yesterday's business conference is stored; nor is it around the next bend or over the hill on another river where the fish may be rising. It's always Now.

Philosophy in an angler's journal may strike some people like so much sauce they can't taste the asparagus. To any such, I apologize.

Excuses? Well, we've been talking 'round and about the subject of dry flies and, for me at least, plying 'em dry is just naturally a reflective occupation.

Boys and Bullheads

A bullhead is probably our lowliest species of fish. He's an ugly little rascal, and is bullheaded to boot. He strips baits put out for his big catfish cousins, gobbles up expensive shiners reserved for real game fish, and generally makes a nuisance of himself wherever he is. He's good to eat, but he's so runty it takes a pail full for a "mess." And, cleaning one of these slick, spiny little creatures is a subject we'd rather not discuss.

But, when you add a boy to the picture, a bullhead attains a new significance. This is the opinion of the Mercury outboard company which claims to have an abundance of both in their Wisconsin backyard. Boys and bullheads just go together, they say.

To a tow-headed youngster, a bullhead is adventure. He's that mysterious something that pulls a cork under and continues to tug on the line until he's pulled squirming into the boat. Then, he's a "prize," not a runty catfish. Because he's always willing to chew on anything edible that's tossed in the water, he furnishes hours of pleasure for young minds that have not learned patience.

Yes . . . a bullhead is mighty important. Like a pup, a BB gun, or a small outboard motor, a bullhead is an instructor in the ways of nature and perhaps a proving ground for manhood.

Mercury advocates that more boys and bullheads should get together, and . . . ya know, we sorta agree with them.

A Quote Within A Quote

Editor's Note: The ANGLER rarely reprints from the many fine outdoors columns in newspapers across the Commonwealth, and primarily because of space limitation. Actually, to do justice to the volume of excellent comment, observations and recommendations that pour from the typewriters of the score or more writers who are generally well informed and sincere and, we might add, underpaid, would require a monthly publication of greater magnitude than is this one.

However, the following was recommended as worthy of breaking the ANGLER's unofficial policy, without any intention of it establishing a precedent and with no indication that we either agree or disagree with its content. It's presented merely as a food-for-thought sort of a thing to stir consciences, if such there be.

From "Hunting and Fishing" by R. H. Hood in the Wilkes-Barre "Sunday Independent" April 26, 1959:

We were set down hard a couple weeks ago by a chap who told us we had better remember that this was 1959, that the glamor days of trout fishing for the few were over and that we had better realize that what is to be will be in the matter to taking trout, as well as anything else.

Maybe that's the case and maybe we are mistaken in feeling that all this has happened because somebody did something wrong.

But, to tell the truth, we just can't help feeling that way and we also feel convinced that if trout were not so easy to breed and raise artificially something different would have been done.

It would have had to be different and we are convinced it would have been better.

We believe a real effort would have been made to keep trout as a game fish—which it should be—and not make it just another species of pan fish, which it never was intended.

What a Day

All this is the result of a visit to the annual cross between a carnival picnic and rodeo that is staged each April at Harvey's Lake.

After which the general feeling was not much improved by taking a look at the boys taking turns throwing things into the Lehigh River.

If they all had thrown together it would have produced a knot defying any mortal to undo.

It just has to produce only one final conclusion.

Which is:

If this is the best that could be done by any regulatory body, it just wasn't worth the effort.

All the time, money and brains expended on research, study, experiments and everything else had produced no more than what would have happened if they never did anything but raise fish and dump them in the streams.

Another Viewpoint

Fearful always that we may have an over-romantic and prejudiced view, we welcome the chance to show what Keith C. Schuyler of the Berwick Enterprise feels after he has his annual letdown, because Schuyler is a real sportsman. . . . Even gets his deer with bow and arrow.

Here's what he wrote after the funny-business of opening day:

"Trout season once again offers the same sickening sensation to those who like to look upon fishing as a sport. Although the crowd was cut down somewhat, the meat-hungry madness was evident up and down the stream wherever you were.

"There was the fellow at Benton dam, we are told, who rushed home with his limit of eight at noon and rushed back for the afternoon and another day (in his book) of fishing. Some fair-sized trout were available, but most were smallish. This is no way discouraged the hungry ones who tossed them back on the bank as fast as they could connect them with a worm.

"If this sounds bitter, it is intended to be, What is this madness that makes such hogs of men? What is it about a stale tasting, weak-muscled pale-faced trout that makes it such a prize?

"We watched one character with a spinning rod this week. The second he attached to a trout, he reeled as fast as possible, then heaved the fish over his shoulder onto the bank. A couple other worm dunkers were stuffing barely legal trout into their baskets as fast as they could haul them out. Here and there were fellows with two rods set for trout.

"This is sport?!

"My eight-year-old looked at me curiously after watching some of the above. He asked, "Daddy, why do they do that?" The only answer I could give was, "They are hungry." This was a weak out considering the size of some of the fishermen involved.

The Soil Speaks

By MUTT STANDEFER

You know I could talk for eons and eons as to the acrimonious struggle I am having trying to survive a multitude of challenging forces.

I am unable to give you my exact age but I have been growing for ages and ages even through the Pleistocene, Mesozoic and Cenezoic epochs. Why, I even made enormous progress during the recent Ice Age. In my own mind I had reached maturity just as God intended that I do. Then just a century or two ago I started to feel the impact and effects of uses and misuses of my components coming mostly from people who were seeking personal gain and leaving nothing in return. Regardless whether they were Conquistadors,

Caucasians, Aborigines, Negro or what have you, seems as though they all had the same aspiration, imperialism and colonialism.

I have had many experiences from an exploitative standpoint, such as deforestation, sodbusters and even blizzards, floods, droughts, and the leaching of my important minerals.

Now in the face of your great technological skills, you are rapidly destroying the valuable components of my composition. I don't want to be antagonistic but I firmly believe some form of reciprocation can be adhered to whereby in event you receive anything from me, then naturally in return I should receive certain gratuities. Unless you change we will continue to live in an over-fed and undernourished America.

—Oklahoma Wildlife

Fishery Scientists Confer at Benner Spring



Photo by Glenn Hoy.

PICTURED ABOVE, first row: A. D. Bradford, Assistant Chief, aquatic biologist, Keen Buss and Daniel Reinhold, biologists of the Pennsylvania Fish Commission; Dr. John Cairns, Philadelphia Academy of Sciences. (second row) Dr. Norman H. Stewart and Dr. Roy Tasker, Bucknell University. Dr. Neil Richmond Carnegie Museum, and Joseph Mirhusky, Lehigh University. (third row) DeWayne Campbell, fishery biologist, Pennsylvania Fish Commission; Dr. James Wright, Pennsylvania State University; Dr. Francis Trembley, Lehigh University. (top row) Dr. Argentins A. Bonetto, division of fishes, Province Santa Fe, Argentina; Dr. Juan J. Parodiz, Carnegie Museum.

For the second time within the past twelve months, aquatic biology personnel of the Pennsylvania Fish Commission met with specialists affiliated with the fishery biology departments of colleges, museums, etc. As was done in the first conference held in Harrisburg early last year research in fisheries and allied matters was discussed. Also information was exchanged on results of completed projects.

The main purposes of these conferences are to avoid a duplication of effort and to agree upon the carrying out of needed research projects by the agency best able to undertake them at the earliest moment.

The next conference has been scheduled to be held in the Philadelphia Academy of Natural Sciences, early next year.

Trout Come High in Tioga! Illegal Trout, That Is . . .

Apprehended while fishing for trout on Gal Run in Tioga County, George C. Schweigart and Ivan R. Stevens both of Mills R.D. 1, Pa. were fined \$119.00 each.

The offense was committed on Monday, April 6th, nine days before the opening day of the 1959 trout season. Surprised by game protector G rald Cyphert of Westfield and Donald Bump, a deputy, the violators threw down their rods and fled. They were placed under arrest a short time later when they returned to their parked automobile.

They were haled before Justice of the Peace Mason Dunsmore, and State Fish Warden Leland Cloos was called. Warden Cloos determined the extent of the violation and effected payment by the defendants, thus avoiding the additional expense of a court trial.

Charged with fishing out of season, catching three over the limit and for taking eighteen undersized trout they were fined a total of \$238.00.



ARE THESE 22 trout worth \$238.00?

Conservation Block

Conservation is almost a religion with some persons, but with most of us our attitude toward conservation closely parallels our attitude toward religion—we're very much in favor of it so long as it doesn't interfere with something we want to do, or doesn't cost us any money.

A farmer may love a stream along whose banks he played as a boy and from whose waters he's caught many a string of fish. But he'll draw it down to a trickle to irrigate his crops, either in periods of drought or to increase his production. He may love to hear the whistling of the quail but he'll burn the ditch banks and corners where they breed.

The citizens of a town may love to fish in the streams of the contry but they'll welcome with open arms a dollar-producing industry that will ruin these streams, and call anyone who opposes them a reactionary fool. And they'll let municipal sewage continue

to pollute a stream rather than raise taxes for a disposal plant.

A housewife may belong to a garden club, read and enjoy nature magazines and love to watch the birds and squirrels. But when the squirrels start eating her camellia buds she'll pay a neighborhood boy a quarter to kill them.

Yet all these—the farmer, the civic group, and the housewife—are conservationists, so long as it does not cost them anything. Conservation is moving on, there is no doubt about that, but the occasional shoals that delay its progress are formed by that most important facet of human nature—self interest. We're all most lenient in our attitude toward ourselves, and in justifying our actions. If everyone were allowed to judge himself we'd have few people in our jails, and none in hell.

—S. CAROLINA WILDLIFE



CONSERVATION ACROSS THE NATION

Litter-Louts

Judging by the *Angling Times* (Peterborough, England), the litter problem is widespread. The Derby and Derbyshire Joint Angling Committee now intend to wage all-out war on "litter-louts" and thoughtless anglers who fail to respect farmers' property.

Any offender against a country "code of behavior" will have his season tickets to fishing waters withdrawn. Angling organizers are vitally concerned that farmers' property should be treated with care.

As the chairman of one angling club put it: "If we allow a minority of thoughtless anglers to spoil things, we are fools."

Interesting Coincidences

Interesting coincidences between water levels and catch of fish have been noted by James Verber, hydrographer, Ohio Department of Natural Resources. He plotted commercial catch figures for both walleyes and yellow perch against Lake Erie water level data over a 50-year period.

According to a Department news release, when water level was high the perch catch was low. When the water level was low the perch catch was high. On the other hand, high catches of walleyes occurred when water level was up. When the water level was down the walleye catch was also down.

C. of C. and N. A. M. Pollution Hassle

The opposition by the U. S. Chamber of Commerce to federal pollution abatement aid is threatening the internal stability of that staid old organization. Alan Otten reports that the Administration is seeking to cut back and soon end the recently-inaugurated program of federal grants to municipalities for plants to combat water pollution. The U. S. Chamber of Commerce and the N. A. M. back this and oppose a bill to double the present \$50-million-a-year authorization.

Manufacturers of pipe, pumps, cement and other items going into the plants openly or quietly back the bill. G. A. Robinson, president of the National Clay Pipe Manufacturers Association, says most of his firms are opposed to any cut-backs and that many favor increased federal spending. Practically all his 41 members, dropped out of the U. S. Chamber of Commerce last year, largely because of the Chamber's opposition to pollution control.

Harry Schlenz, president of Pacific Flush Tank Co., says he has been leading a fight within the N. A. M.'s conservation committee to get the organization to drop its stand against the pollution control bill, and that "more than half the people attending meetings" support him.

—*"Wall Street Journal"*

Water Supply Reclamation

The city water supply reservoir of Dickinson, North Dakota, was loaded with carp, suckers, and bullheads after impoundment. Built in 1950, all efforts to improve fishing in this 790-acre lake by stocking thousands of walleye, northern pike, largemouth bass, and bluegill failed. The rough fish predominated.

After four years of planning and pleading, the state Game and Fish Department, with the active cooperation of the State Health Department and the U. S. Public Health Service, treated the lake and 70 miles of feeder streams with rotenone last August.

Dale Henegar, fishery biologist, reports that about 98 per cent of the fish population was killed. Water transparency increased from 4 inches to 4 feet, materially reducing water treatment costs. A detailed report is to be issued by the USPHS.

—*Sport Fishing Institute "Bulletin"*

Highways Dams

West Virginia has taken the lead in coordinating lake building with road construction. A bill authorizing expenditure of \$75,000 for the building of lakes at highway fills when engineeringly-sound was passed by the state legislature in March.

The bill provides that slack-water dams may be created in connection with highway, bridge and culvert construction on request of the State Conservation Commission and with approval of the State Road Commission. In all cases in which a public authority, private organization or person petitions for reservoir construction, the Conservation Commission director shall require the petitioning authority, organization, or person to pay his share of the cost.

Passage of the law sets an excellent precedent for other states considering opportunities for additional water resources in conjunction with highway construction.

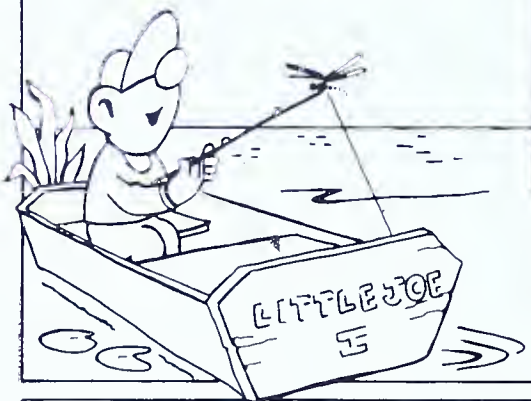
—*Sport Fishing Institute "Bulletin"*

Answers to ANGLER QUIZ No. 9

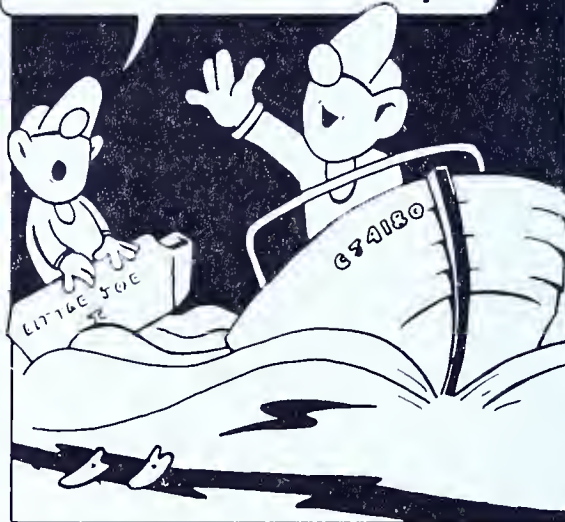
4	A	10	F
7	B	3	G
9	C	6	H
1	D	2	I
8	E	5	J

CARELESS JOE AND A BOAT STORY!!

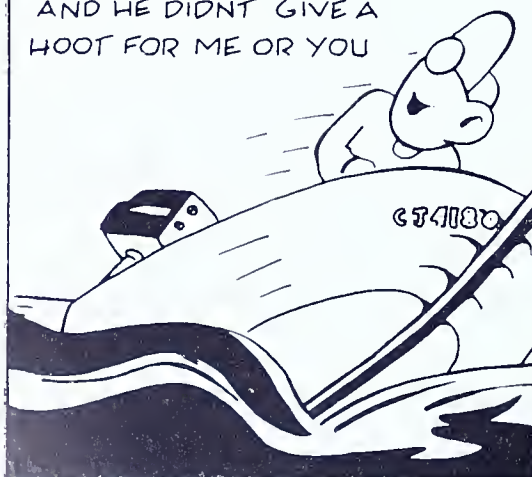
ONE QUIET, BEAUTIFUL DAY IN MAY
LITTLE JOE FISHED THE HOURS AWAY
BUT TROUBLE WAS SOON TO COME
WHEN HE HEARD AN OUTBOARD
MOTOR HUM.....



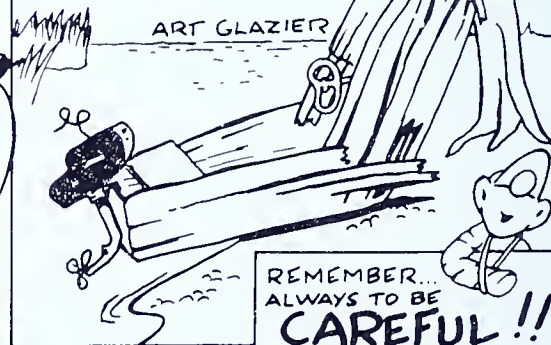
HEY! UNK, TAKE IT EASY!
I'M JUST A LITTLE GUY!



BUT UNK SPLASHED ON BY
WITH NO REPLY
HIS BOAT WAS NEW, MOTOR TOO
AND HE DIDN'T GIVE A
HOOT FOR ME OR YOU



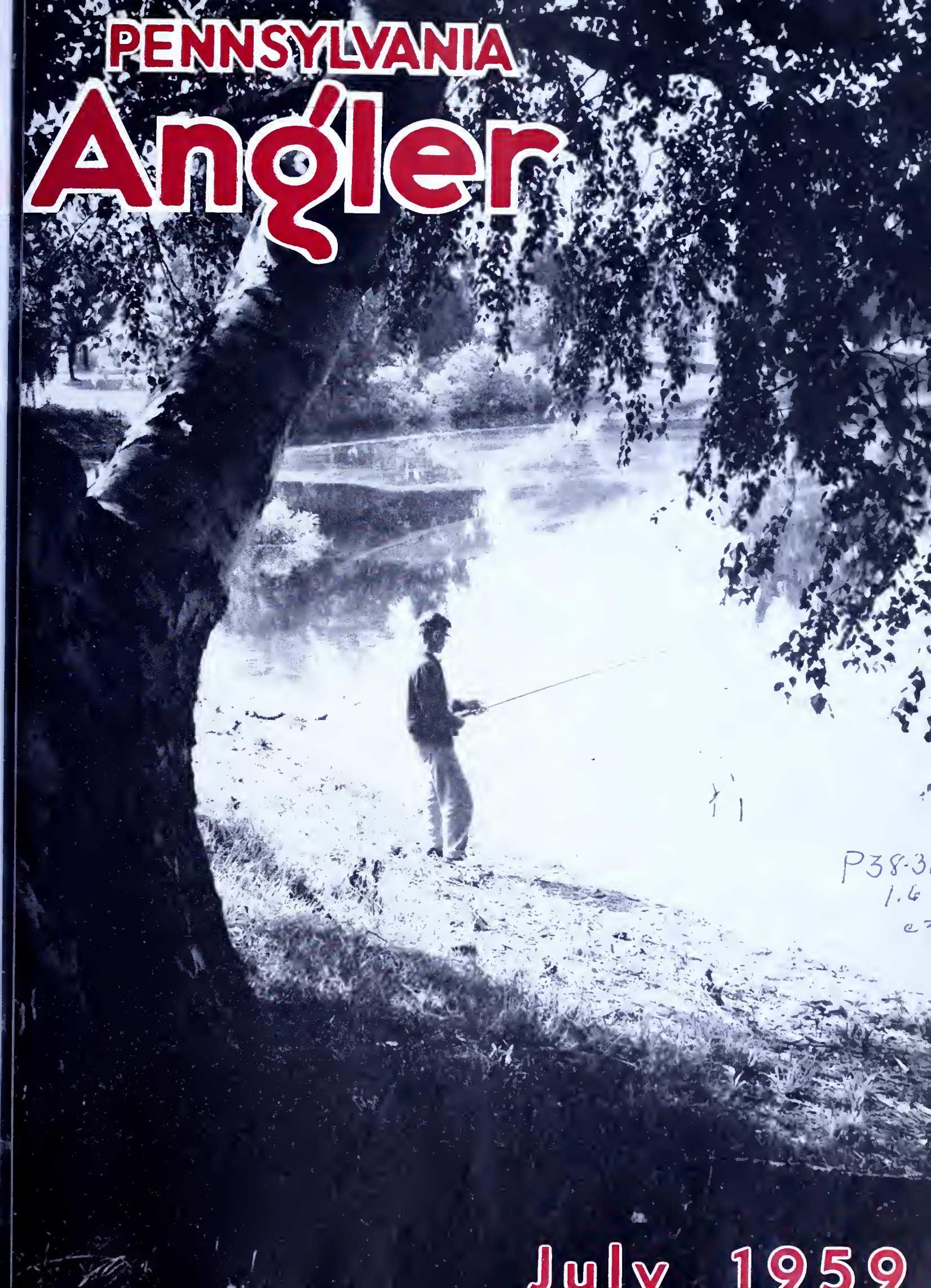
NOW THIS LITTLE STORY MUST END
BECAUSE CARELESS MISSED THE BEND
INSTEAD OF A BOAT THERE'S
A PILE OF LUMBER
WHERE POOR CARELESS
WAS TORN ASUNDER



—From "Wildlife in North Carolina"

PENNSYLVANIA

Angler



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July 1959

The Term "Wise Use" Needs Broadening

In a recent editorial, entitled "Waste Beyond Measure," a Cheyenne newspaper asked some questions which perhaps we, and almost certainly our children, will have to answer sooner or later:

"Do we have so much that we can waste so recklessly?"

"The thought occurred to us after visiting, of all places, the Cheyenne municipal dump. . . . You ought to see the stuff that gets covered up, apparently to be lost forever.

"Fence posts—including four by four's—wiring, lumber, firewood, toys, fencing, packing, cardboard, gears, fabricated metal and sheeting of all sizes and descriptions. . . .

"How much longer can we, as a nation and in virtually all facets of the American way of life, continue to make, use and waste so casually?"

Writing along the same lines, Ernest Swift, executive director of the National Wildlife Federation, recently made some rather pointed statements:

"Today it is popular to express the opinion that conservation should not be a philosophy that keeps resources locked up, that idea being mouldy and outdated; but that today's progressive view means strict adherence to the 'wise use' of every part and parcel, spice and element of nature's bounty.

"Just what did the first person to express this thought have in mind? Did he mean technological efficiency in the conversion of raw materials, or use after conversion?"

Swift then points out that we have made, and are still making, great strides in the conversion process and asks:

"But I raise the question, what uses are made of the lumber, paper, plastics or other products after they leave the mill?"

"The plain truth of the matter is that the American economic system is not based on wise use or the conservation of natural resources. It is based on consumption.

"It is not wise use to curtail the use of steel for whatever use it may be put, but it IS wise use to run a car a couple of years and then park it in a junk mortuary.

"It is not wise use to regulate the domestic or industrial use of water but it IS wise to dam all the free-running rivers so people individually or collectively can waste it in any manner they see fit.

"It is not wise use to deny water for irrigation, but it IS wise use to raise crops by irrigation and then destroy the crops to control the price.

"It is not wise use to place restrictions on the use of the land, but it IS wise use to let a landowner burn his forest, let his soil erode and to destroy the tax base.

"Conservation leaders have got to broaden the base of the term, 'Wise Use,' to include the consumer. The consumer means the public who, in the long run, will suffer most when the rationing of resources becomes necessary."

—Virginia Wildlife

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THE COVERS—FRONT: "School's Out"
BACK: "Man-oh-Man!"

Photos by Johnny Nicklas

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Spinning Comes of Age

By RAY OVINGTON

Quit "Throwing" . . . and Start "Fishing"



SWIFT WATER action!

With most of us, spinning has come of age. We have risen over the novelty of the long, effortless cast, the fact that we can pitch a lure hither and yon and, by indiscriminate casting, cover all the water of the stream. Quite naturally we caught a lot of fish and big ones, purely from a percentage of casts, bad or good, and the subsequent delivery of the lure across enough fish-producing water.

While this was a revelation of sorts, the most important discovery, and consequently, the greatest value of spinning is evolved when the angler realizes that the old adage, look first and act later pays off, particularly in the over-fished, over-spun streams of the twentieth century.

Going forth to the stream armed with spinning tackle, the angler KNOWS that he has a lethal weapon. The question of catching fish is no longer in the books. It has been replaced by the knowledge that this spinning

gear, when directed in pin point accuracy to a specially selected run or area of the stream, will pull a fish, usually on the first cast. This, then, is the epitome of spinning, the art that is in the same league with the dry fly purist, the nymph artist and the expert wet fly or streamer man. "Calling your shots" might be a saying that belongs to the accurate spincaster.

In order to accomplish this, the same knowledge of the stream is needed as in any form of angling, if we are to avoid the "chuck and chance it" type of angling.

Here is a long pool, headed by a charging rapids. Some fish are feeding just under the surface just where the water slows down into the glide. The angle of approach must be considered, for a wrong cast and a drag through the feeding area will put them all down for yourself and others. In this situation, try and cast from an upstream position to a point just ahead of where the fish are seen feeding or bulging. In this way, the actual area where they are active will be untouched, yet, by the mere fact that they are looking upstream into the current, they will see the flash of your ultra light lures selected for the specific topwater assignment. Shallow running lures are called for since the fish are on or near the surface. Work both sides of the feeding area and then gradually work down into the fish.

Conversely, if it is impossible to cast to them from the upstream angle, take a position below and work up to the feeders, rather than cast over them and drag the line and lure through them. In this way, again, they will not be put down unnecessarily.

Another example: Here is a big midstream boulder with its long wake. Haphazard criss-crossing, and indiscriminate coverage may disturb a lunker and drive him to cover unknown. Pick your angle of attack and keep your powder dry. Use the same up or down stream strategy as described above, or if both are an impossibility, cast well ahead of the rock, from the side first on the near side and then the center and finally the other side, working ever closer to the rock in an effort to bring a fish out from under its cover.

Remember, that even though the monofilament line is almost invisible, it is still dragged over the area and is bound to disturb the fish, so work the close area first, all down the near side of the rock's wake, leaving the center strip alone for the moment. Then wade to a point below the rock, spot cast to the lower side of the rock, then place several casts right down the center, allowing the lure as slow an action as

possible while it is in the run. Now, you are free to work the other side without fear of disturbing any fish that might be present. Don't make the mistake of repeating the casts too close together . . . pause a bit between them just in case a fish was moved by the lure and takes his time to return to where he had been resting.

Again, another situation where a little strategy pays off in more strikes per cast is the working of the tail of a pool. Here again, fly-fishermen of old know that lunkers sometimes stay in this water or, as the shades of night begin to fall, they move into these quieter and more shallow sections to hunt out minnows and nymphs.

Another subtlety of expert spinning is the business of changing lures in a given area. From fishing very much in salt water where the action of fish has been very watchable, it is surprising how quickly fish tire of seeing the same lure dragged in front of them. Usually, in the case of the salt water fish, three casts that they have followed is enough, the fourth is absolutely ignored.

Take this tip and use it. Change lures during the waits between casts and you will find that for a given area you can pick your casts and differ your lures to such an extent that you have, by careful working of the area, decided definitely that you have done your best. Quite too often spincasters are lazy in this part of the angling technique. I have found myself guilty of the same fault, particularly when I have had faith in a certain lure, to cast and cast with it before giving any other lure a chance. The dry fly man knows well the potency of lure changing in his artful approach. Copy him as spin-fisherman and you can never go wrong.



WORKING THE tail of a pool.

There is no doubt that spinning tackle takes big fish, if for no other reason than the lure get down to where they are better than the flies do, in most circumstances. There is though, in the mid and late season, the fact of feeding trout that are seen breaking

the water. Now is the time to use the lighter stuff up off the bottom, during these feeding periods. When done right, the fish will not be put down off feed. They are hungry and the chances are that when they see your shiny morsel coming near them they will abandon their chasing of the nymphs for the larger package.

In deep cold water of early spring, however, the small lures again fished slowly and deep will wake up even the most sophisticated old brown.

As to lure size, I prefer the smaller ones, just as I have always done in dry fly, wet fly and nymph fishing, for the smaller it is the less chance they have to discern the fraud. I would sooner fish a light lure down deep slower than use a heavy lure that has to be kept moving too fast for enticing action. Here again the subtlety comes in. Spinning lures of the metal type such as spoons and spinners being of basic design, can be rotated regardless of color and size. The variance in action even though it might be the same size and color is sufficient to arouse new curiosity.

For the very clear waters, I prefer spoons or spinners that have become dulled a bit. For the deep water that is somewhat foggy, the shiny lures are better.

In selecting lures make sure that you buy the ones that will not foul up by doubling back on the nylon. One way to keep the lure from doing this is to cast slightly beyond the mark and gently pull the lure back while it is still in the air. Another way is not to flip the rod too hard in the initial part of the cast to avoid "spinning" the lure through the air.

If you want to have fun with the trout, tie on a dropper wet fly of about a size 10 about eighteen inches above the spinning lure. I won't tell you what happens! Another trick, during the fly hatch is to use two weighted wet flies instead of a spinning lure.

Judgment first, figure the water second and third, cut out all chance casts and call your shots. You'll find that with a cut down number of casts you'll enjoy the spirit of the "hunt" much more and that you'll begin to get to know the stream you are fishing and the spots where the fish are lying under any given circumstances.

In this way, as a spin-fisherman who has, perhaps, never handled a fly rod, you'll learn the lessons of the stream, the mysteries of the current and find therein the secrets of the trout. Then and only then do you deserve the added luck that is built into your spinning gear. Spinning then, as such, becomes an art, like the other forms of angling for trout . . . the highest point of enjoyment possible on the stream.

Some day, when the time comes, you'll realize the fun to be had in like measure with the fly rod and a whole new field of operation will open up to you, and based on your experience as a careful spin-fisherman, your fly-fishing will take on a dimension of greatness in the same measure as the fly man who had to learn the very same lessons.

Call Him Pike, 'Jack' or Luce

By FRANK A. KING

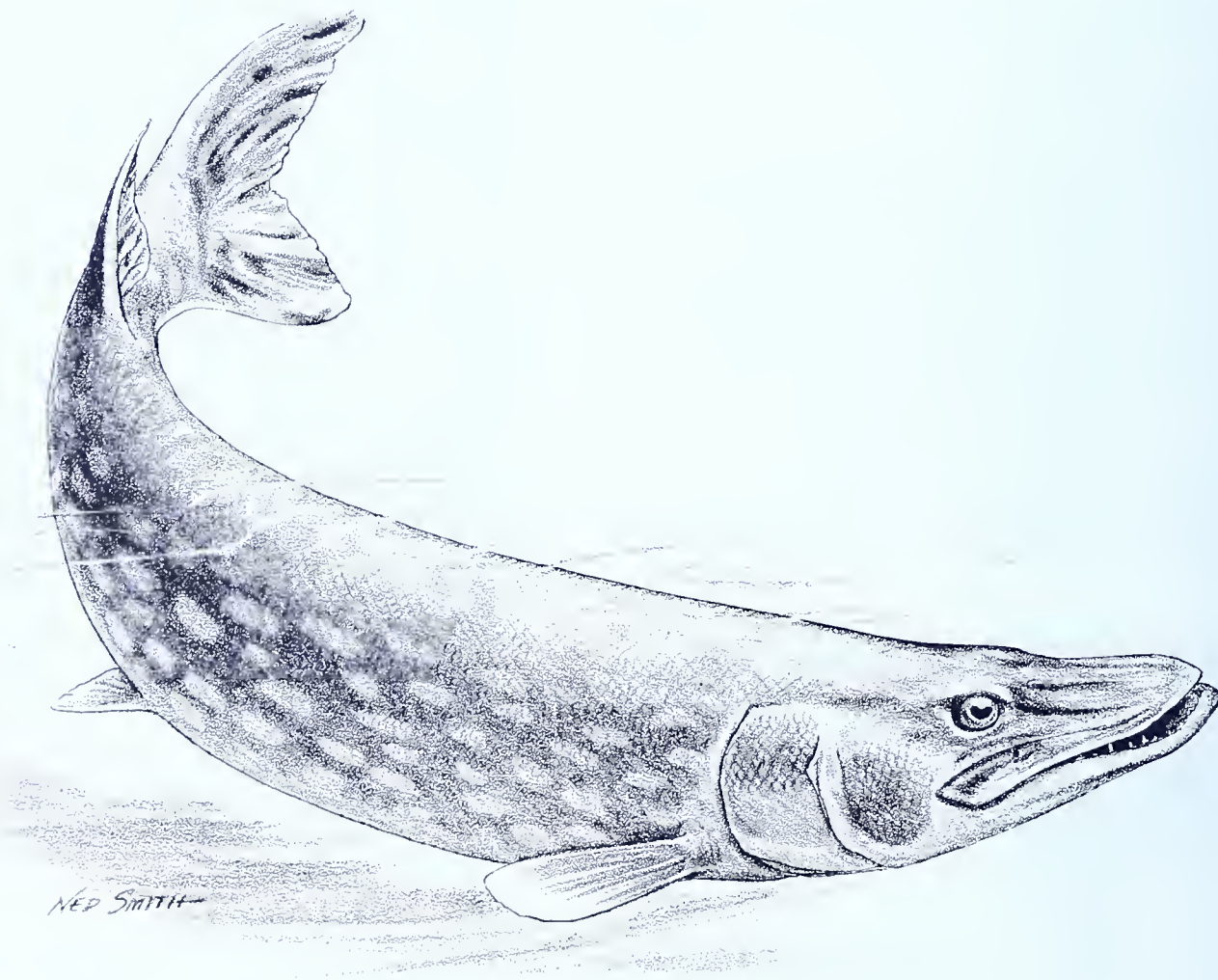
ESSEX, ENGLAND

Editor's Note—The range of northern pike (Esox lucius) in Pennsylvania is confined to suitable waters of the Allegheny River and Lake Erie drainages.

The pike (*Esox lucius*), jaek or luce—for this fish is known by all these names—is a voracious monster, in fact, a fresh-water shark. Its second title is usually given to fish of the species weighing less than four or five pounds. Pikes are to be found in rivers, lakes and ponds almost throughout the world.

pike, and perhaps tamed and petted it as they did lampreys and sturgeon, if they were aware of its existence.

In the fourth century a writer mentioned it but his description is decidedly unfavorable to its culinary qualities, for it was reckoned as being utterly unfit for



There is no satisfactory evidence to prove that either the Greeks or the Romans knew anything of this fish, although the patricians, and, indeed, all classes, had their ponds in which they reared and fattened most of the chief varieties of the finny tribe to be found in salt as well as fresh water, and were adepts at transporting live fish as well as spawn great distances.

Undoubtedly, epicures and fish-enthusiasts, such as Lueullus, Hirpinus and many others, who showed great ingenuity and spent vast sums of money in pisciculture for the purpose of supplying their own tables as well as for amusement and profit, would have cultivated

the tables of the rich, and figures only as the coarsest fare of the taverns.

In the last part of the thirteenth century, during the reign of Edward I of England, pike was double the price of salmon, and was preferred to either turbot or eod. Having been held in such high estimation in the British Isles towards the close of that century, it had an earlier settlement there than any of the creatures or commodities mentioned in the old couplet—

*"Hops, Reformation, turkeys, carps and beer
Came into England all in one year."*

In fact, pike must have been indigenous throughout

the greater part of Europe so far back as the third century, when, according to tradition, Saint Anthony preached to the fishes, and the result was described in the lines:—

*"Sharp-snouted pikes,
Who kept fighting like tykes,
Now swam up harmonious
To hear St. Antonius;
No sermon beside
Had the pike so edified."*

But the impression made by the venerable saint does not seem to have been a permanent one, for the old rhyme continues:

*"The sermon now ended,
Each turned and descended.
The pikes went on stealing.
.....
Much delighted were they,
But preferred the old way."*

Almost every writer on fishing, from Walton downwards, had repeated Gcsner's story about a pike which was put into a pond near Hailebrune, in Swevia, by the Emperor Ferdinand, in 1230, and was taken out again in 1497, having a brass collar fitted with springs round its neck, with an inscription on it, from which it appeared that it was 267 years old. It weighed 350 pounds and measured 19 feet and the skeleton was deposited in the Mannheim Museum.

Wonderful stories have been handed down by tradition and also recorded in books concerning the voracity of the pike—know it has attacked the noses of horses and mules when they have been drinking at ponds or rivers, and, holding on tenaciously—as its teeth point inwards—have been dragged ashore. It was said that Polish girls, when washing clothes at fords of great rivers, have had their feet bitten off by some monster of the species. One story concerns a pike which gorged the head and neck of a swan, but both lost their lives.

Eagles hovering over lakes in Scotland and Ireland have been seen to strike their talons into the bodies of pike when basking on the surface of the water, raise them into the air, and, from inability afterwards to disentangle themselves, have been dragged downwards into the depths, where both bird and fish perished.

There is a well-authenticated story of a large pike making a dash and lacerating a boy's legs who, with trousers tucked up above the knee, had tried to stop its passage into a deep hole from a milltail, in the river Skerne, in Durham (England), when the closing of the hatches had made the water shallow.

A sixteen-pounder was seen to snatch and capture a sparrow, minus the feathers, when such bait was permitted, and then attacked the hands of the angler as he tried to haul it ashore.

In England, pike begin to spawn in February, and continue this process until the middle of May, a great deal depending on the temperature of the water and

the nature of the season. The fish is then flaccid and slimy, and utterly unfit for human consumption. It is also so weak that it has no strength to show sport.

During the hot summer months this fish is more or less inactive, feeding chiefly at night, and it is not until August approaches that it regains its natural strength and activity, when it becomes a fair game for the sportsman.

As to "trimmers," whether they go by the name of "bank" or "floating," they should never be used unless for the purpose of thinning or exterminating pike in waters where it is intended to cultivate more valuable species, such as trout, char, grayling, or perch.

Snap tackle sometimes may be advantageously resorted to when, owing to the state of the atmosphere and other causes, the fish mouth and mangle, but do not freely pouch the trolling bait.

The "Nottinghamshire" style of fishing, which attaches a live bait to a sort of snap tackle suspended from a large float, is admirably adapted for the capture of fish in the peculiar "swims" for which the river Trent in England is noted, but is utterly unsuitable in general for lakes, canal-reservoirs, rivers and ponds so often infested with weeds, to be found in other parts of the British Isles where pike abound.

Spinning has its advantages on such rivers as the Thames, where the magnificent trout sports itself in its favorite reaches, and which may sometimes be taken while the angler is intent upon the capture of its enemy. However, for all practical purposes, and in view of the general condition of the waters in which pike are to be found, the system of trolling is usually recommended.

The spinning bait is apt to attract small active fish, who can seize it more easily than larger ones, though perhaps, on waters where it is tried for the first time it may be deadly. The lure soon loses its novelty, just as trout become accustomed to the spinning minnows where it is used frequently, even in discolored waters, and either follow it for amusement or retire in disgust.

The truth is the American weed which found its way into the waters of the British Isles over a century ago has blocked up many of the rivers, canals and reservoirs, and even private ponds, so as to interfere seriously with their capacities for holding water.

However, trolling is comparatively independent of the unfavorable conditions of weeds, overhanging branches of trees, and bulrushes encumbering the banks and margins of such waters containing pike, and can be followed up when all the other methods would prove fruitless.

The trolling-rod should never exceed eight feet in length, and should have a slight spring sufficient to ease the strain on the line while the angler flings his bait to the destined spot close to the leaf of a water-lily, or near a bed of weeds, or hard by the root of a tree where some solitary lunker is concealed, lying motionless, waiting his prey.

Three rings will be sufficient—the first near the reel, the second in the middle, and the third at the top; and each ought to be so wide as to admit easily

the thumb within it, so that, should the line kink while fishing on a wet day, or from other causes, the entangled portions will readily pass through these large apertures without the risk of cheeking the pike when it is running to its pouehing-place.

Under all conditions, the angler should be careful to fit up his rod with good-sized rings that will stand out stiff and at right angles to it, and not be movable, like those placed upon a fly-rod.

Most trolling rods are too long or have too many rings so therefore are almost, if not completely, useless on rivers and ponds encumbered with timber, or from fishing from a boat; and, often an old-fashioned troller, with his line rolled up into a ball in his side-pocket, who flings his bait with a forked stick into a pond or river, catches more fish during the day than the man with a magnificent long rod, beautifully rigged up, but which perpetually gets its owner into trouble among the branches of trees.

Baits should be secured the night before the fishing is to take place. Gudgeons, dace and roach are the most killing lures, but, in the absence of these, small perch will do—if their fins are cut off—as hungry pike will greedily swallow these.

The baits can be kept alive for the night in a hamper



or large kettle submerged in a canal, or any other convenient water, and the angler should have at least twenty, in a lively state, in the bait-kettle. If he can take advantage of a pond with a stream running through it, or of a nearby river, then he should place there a large rough wooden box, perforated with holes, furnished with a lid, and secured by chain and padlock.

Dead baits carried in bran are always inferior to the live ones, and there is possibly no greater hindrance to sport than to find the gudgeon or other small fish towards the close of a hot day begin to fall to pieces just as the pike in the evening begin to roam about in search of food, but fight shy of that disagreeable morsel which has been kept in bran for hours. A lure fresh and glistening out of the bait-kettle they will gorge at once. Small fish soon die when put into pump water.

Select gorge-hooks which are well and heavily

loaded, neither too long in the shank nor too rank in the points.

In fact, the points should stick out very slightly beyond the jaws of the bait, thereby running small risk of pricking the fish when it first seizes it, and at the same time projecting just far enough outwards to fasten themselves into its gullet when struck.

It is advisable to have at least two baiting-needles, and not less than half a dozen gorge-hooks, each attached to a gimp trace with two swivels, in the pocket-book. The advantage of the swivels is that these cause the bait to perform gyrations in the water resembling the movements of a wounded fish, which encourage the advances of a "jack," besides being useful in other respects, should the pike when hooked, for instance, fall foul of snags or weeds and begin to twist the line which it often tries to do.

In the course of a few minutes any experienced or old fisherman will readily show the beginner how to bait his hook. In order not to interfere too much with the old hand's sport, the novice should remember to have scissors with which to clip off the fins and also thread to tie the tail, as both operations will help the bait to spin freely as well as last longer.

When commencing to troll, first try those places that are nearest to the banks, for the luke very often lies there hidden under weeds, or beneath a fallen tree, or among sedges or bulrushes, from which it rushes forth the moment it perceives any movement in the water, in the hope of grabbing a young duck, a water rat, a frog or a fish—in fact anything that has life, always excepting a toad or a frog full of spawn. Large fish will pull down even moorhens, and gorge these, including feathers and bones.

After throwing the bait into such places most likely to harbor fish, keep moving it up and down, but avoid jerking motions or sudden spasms, either of which will cause suspicion. It is a mistake to assume that because pike are sometimes bold, and when on the feed always voracious, they are not afraid of men. The very contrary is the case. The shadow of an angler or his rod falling on this fish, on a bright day, when basking near the bank, will cause it to dart away like an arrow; therefore, by all means, keep at a respectful distance.

Sometimes the bait will get hooked on to a weed or a snag at the bottom and the fisherman may be in doubt whether or not a fish has seized it. In such circumstances, he should not be rash; by waiting a minute or two, and slackening the line, the weight of the lead may of itself disengage the hook. However, should it prove to be a run he will probably be rewarded for his patience.

When a pike seizes a bait, it grasps it crosswise in its mouth, just as a dog holds a bone, and after a few vice-like grips, and some shakes of the tail, intended, doubtless, to celebrate its triumph, it moves away, sometimes slowly, but if a monster, very often rapidly, towards its hole. The technique then is to play out the line freely, when the advantage will be

found of the rings being large and few and far between. The slightest check will cause the fish to drop the bait.

Some anglers advise giving a pike ten minutes, others five and eight, as the orthodox time for it to gorge its prey, but a great deal depends upon the day, and whether the fish are taking freely or not. One thing is certain: a great many fish are lost through striking too soon.

As a general rule, seven or eight minutes—not guessed at but counted by a watch—are quite enough; after which the angler may strike, or rather, tighten his line, for in all probability it is overlaid with a mass of weeds, and perhaps the fish is hooked already.

If in a boat on a large sheet of water, the fisherman must thread his way up to his fish, cautiously and gently disengaging his line, and winding it up until he comes close to it, when it will, in all probability, rush frantically about here and there trying once more to bury itself in the weeds.

But if he keeps his line well reeled up, and brings the power of the rod to bear upon it, he will soon exhaust it. Haul it up alongside the boat to secure it with the landing-net, which always ought to be wide and deep, and fit to receive a ten- or fifteen-pounder.

If fishing from the bank of a river or a pond, and he is about to land a fish, nearly the same remarks apply; but river pike are always more lively and show better sport than others; and as the space is more or less confined, the angler must be prepared to give his fish the butt should it attempt to get among roots of trees and under weeds.

If out alone without a landing-net, draw the pike quietly towards the bank, place one hand behind it, insert a finger and thumb into its eye-sockets and land it—but take care if the hand is put into its mouth! Do not attempt to hoist it out by means of the rod, for if you do so the probabilities are in favor of your dragging the stomach out of the fish, and leaving it in the water to die slowly in agony.

When trolling for pike the angler always stands a good chance of taking a large perch, more especially if gudgeon is used as bait; and a few specimens of perch, two or three pounds weight each, add to the variety of the sport, as these trot out the line in a manner peculiar to themselves.

As to the line, this should be of prepared silk, seventy or eighty yards long; and the question of expense for a really good article is not for a moment to be weighed in the balance against a cheap but inferior one, as experience amply testifies.

In waters frequented by this fish, practice soon tells where they lie; and while in the act of dropping your bait into an opening among weeds, or other similar cunning nook, how excited is the troller when he beholds a swirl in the water close to his bait, almost before it has touched the surface, and to see the extended jaws of a six- or ten-pounder grasp it with a click which shows that it means business, and it will be the angler's fault if he does not allow it time to gorge and afterwards land it.

The pike, like grayling, shows sport during the autumn and winter months in the British Isles, when salmon and trout are out of condition, but it is not a fish which should be introduced to any river frequented by any species of the *salmonoid*, where it must necessarily commit terrible havoc; but in sluggish rivers, and in canals and ponds where scale-fish of the inferior sorts abound, it serves to keep their numbers within due limits.

By itself pike is excellent for the table, and can be easily prepared in the following way:

Clean and wipe with a cloth without washing it. Stuff it in the usual way, and boil it with the scales on. When brought to table, run a knife through the skin along the backbone, from the head to the tail, when it will fall down on each side like a flap. By letting the scales remain the juices are kept within the fish while it is being cooked. Pike prepared in this way, when in condition, is equal any day to crimped cod.

DIP, DAP, DANGLE?

The things a man will do to catch a fish!

There are probably more names for fishing techniques than fish themselves. In fact, the description given locally to various methods often makes you wonder if fishing is even involved. What's familiar in one section of the country is unknown in another.

"Casting" and "trolling" probably won't raise any eyebrows in the name discussions because most folks have tried their hand at both. But some of the others which are revered may not be so fortunate. Here are some of the more common methods and their "cousins."

If you've ever gone "dapping" for crappie and bass in one area, you would have probably done some "jigging" in another. Out west, this same technique of using a long pole and a short line goes under the title of "tule dipping."

Now "dunking" may apply to coffee and doughnuts in the city, but on a lake or stream it's associated with minnows, worms, and doughballs. A winter steelhead fisherman goes "plunking"—an exacting science of lobbing salmon eggs into the current, planting a bell-equipped rod in a holder, and hustling back to a warm bonfire. "Drifting" is the animated version of dunking a baited hook.

During cold weather, "ice stomping" is a popular sport which frays the nerves and gives sour dispositions to carp populations. "Frostbiting" proves that fishing sometimes has more appeal than a line of chorus girls.

Whatever your choice or the name you give it . . . it's all fishing. And don't ever try to change a name. That's sacred ground.

—Mercury Outboard Fishin' Facts

Getting Aboard Boat and Away From Pier Test of Seamanship



When boarding a boat, keep low and step into the center of the boat while steadying yourself on the pier. If you have gear to take aboard, pile it on the pier within easy reach so that you can take it aboard after you are seated in the boat.

(Editor's note: This is another in a series of articles on boat handling and seamanship, designed to give basic information to the beginning boatman.)

When you get your newly purchased outboard rig into the water and are ready to shove off for the first time, you are certain to experience that feeling of excitement that comes with a new adventure.

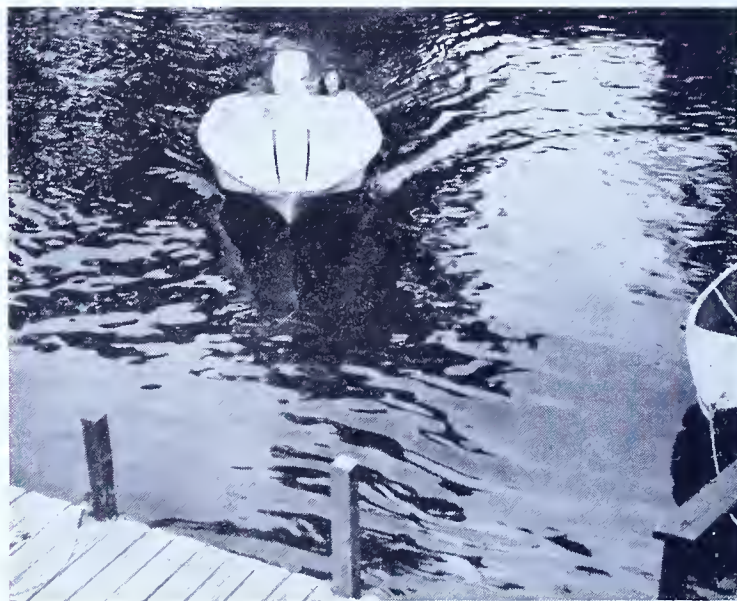
If you're new to boating, the Evinrude Boating Foundation has a few tips before you start out on your first run. For one thing, if you don't have all your gear aboard your boat, lay it out on the dock and step aboard first. Then either have someone hand it to you, or reach onto the dock and lift it into the boat. Never step into your boat with your arms loaded with gear or you might wind up getting dunked before you want to.

When you board a boat, do it carefully. Unless you have a big, stable craft, do not step on the gunwale when boarding, but instead step well into the boat.

After you get yourself and your crew on board, make a careful check to see that everything you need is in the boat. Make sure the kids are wearing their life preservers, that your lines are all clear and that everyone is seated properly.

Before getting under way, look over the situation around you. Be sure everything is clear before heading away from the dock. Remember that when leaving the dock, the law says you must yield the right-of-way to boats approaching.

If all is clear, start your motor and prepare to shove



Aim for dock at whatever degree of angle is possible. Go just fast enough to maintain headway. Near dock shift to neutral. Shift to forward quickly and then back to neutral to provide forward momentum. Shift to reverse and gun engine to avoid striking dock, boats, etc.

off. Now it is time to remember that your boat doesn't steer the same way as your automobile, which follows the front wheels. In boats, the stern responds to the steering impulse first and in the opposite direction from that which the bow is going to take. So, when you are next to the dock, give your stern room enough to swing before you attempt to turn.

With your motor started and in neutral gear, you can cast off your lines. If the wind or current is away from the dock, you'll have little trouble. Just let your rig drift gently away before shifting into gear and heading for open water.

However, if the wind is a factor keeping you in close to the dock, have one of your crew push the boat away from the dock with your boat hook or paddle and then back slowly until clear of the dock. Then you can shift into forward and get under way.

You can't untie your lines from the pier once you are in the boat, so before boarding loosen them and simply pass a line around the piling so that it can be easily pulled free when it is time to get away.

Now you are free of the dock, keep your speed slow until you are clear of all obstacles and other boats. This is quite important, as almost all boat docks are becoming crowded with the increase in the number of boats in use. Once under way there are two basic rules to follow: Keep the boat under control at all times and always be alert.

—Evinrude Motors

17th Annual Conference
of the
CONSERVATION LAW ENFORCEMENT CHIEFS' ASSOCIATION
ELECTS WILLIAM W. BRITTON, VICE PRESIDENT

The conference was held at
Oglebay Park, Wheeling, West Virginia
April 19 through 22, 1959



In the photo and reading left to right, are: Front row—Andrew J. Vormwald, New York (retired-1959); Arthur C. Baehman, West Virginia; Robert H. Lowry, Rhode Island; Thomas E. Rose, Connecticut, active life member. Middle row—William P. Coffin, New Jersey; Thomas F. Bell, Pennsylvania, Game Commission; William Wildeman, Delaware; Robert J. Vickers,

New York; William Goodman, New York; Elmer H. Ingraham, Maine, Inland Fisheries and Game. Top row—Alfred J. Hunyadi, Connecticut; Howard S. Willard, Massachusetts; William W. Britton, Pennsylvania, Fish Commission; John F. Anderson, Maine, Sea and Shore Fisheries; and Mauriee Lundy, U. S. Fish and Wildlife Service, Boston.

Should Its Harvest Fail...

"Grass is the forgiveness of nature . . . Forests decay, harvests perish, flowers vanish, but grass is immortal. Beleaguered by the sullen hosts of winter, it withdraws into the impregnable fortress of its subterranean vitality, and emerges upon the first solicitation of spring. Sown by the winds, by wandering birds, propagated by the subtle horticulture of the elements which are its ministers and its servants, it softens the rude outline of the world. Its tenacious fibers hold the earth in place, and prevent its soluble components from washing into the wasting sea. It invades the solitude of deserts, climbs the inaccessible slopes and forbidding pinnales of mountains, modifies climates, and de-

termines the history, character, and destiny of nations. Unobtrusive and patient, it has immortal vigor and aggression. Banished from the thoroughfare and the field, it bides its time to return, and when vigilance is relaxed, or the dynasty has perished, it silently resumes the throne from which it has been expelled, but which it never abdicates. It bears no blazonry or bloom to charm the senses with fragrance or splendor, but its homely hue is more enchanting than the lily or the rose. It yields no fruit, in earth or air, and yet should its harvest fail for a single year, famine would depopulate the world."

—John James Engalls, 1872

Worms Then Flies

By GORDON L. STROBECK

Perhaps you have heard that anyone can catch trout on a worm. Well he can—if he has the know-how. But for the most part, like a fly, a worm must be presented just right to attract attention.

In a sense, worm fishing prepares you to fish properly with flies, so that if you should decide to try fly fishing, you will have the tendency to present them in much the same natural way you presented your angleworm.

Before you try fishing with angleworms, there are a few things to remember. First, trout prefer worms—if you know how to fish them. You don't just dunk a worm in a stream and immediately expect to find a trout on the end of your line.

Secondly, it is important to fish upstream. Trout almost always stand with their heads upstream so fishing upstream gives you a chance to approach them from behind. For, if they see you, you would only be wasting your time and it would be useless to wet your line. Also, fishing upstream means that your worm will travel farther along the bottom, your line won't drag or swing the worm unnaturally. Then too, the stream-bed disturbance is not floating ahead and alarming fish.

Third, you must learn to read the water. This is, perhaps, the most important part of learning to fish with worms. There are many good trout streams, but some anglers will pick out a shady hole and still-fish. Others will fish downstream. Neither are likely to be successful because the fish see or sense them as they approach the stream. These fishermen then say the fish aren't biting. The fact is that they have been "spooked."

In large, medium, and small-sized streams, the successful trout fisherman concentrates on pools near rapids, working up from the tail of the pool because feeding trout are often found there, waiting for juicy morsels to drift to their hungry jaws.

If the angler doesn't catch anything at the tail of the pool, he then tosses his worm near cut banks, edges of moss beds, near stumps, rocks and brushy tangles, finally working the swirly head of the pool, but always working upstream. Usually trout will bite in some of these spots. Big trout tend to hang out near places with lots of cover. Always remember that it takes a smart trout to grow big. The largest trout I ever caught was near a tree where riffles ran down into a large pool.

Conventional 8½- or 9-foot rods are used when using angleworms to fish for trout. The regular fly line leader can be used, but a six-pound monofilament line, backed by regular fly line is better. Since you are going for the big ones, tie on a No. 8 hook or even a small bass hook to the end of your leader or monofilament line with an extra-stout knot around the shank. Above the hook, clamp on a small BB shot loosely so it can be run up and down your line or leader to meet different current conditions in the stream. An automatic reel is preferable, although "wind-up" reels can be used.

I hope that you will try trout fishing with angleworms. If you do, I am sure that these tips will help you to catch those "lunkers." It's fun to have a two- or three-pounder on the end of your line. And remember, you can fish with flies if you want to, knowing full well that your skill in catching fish with the lowly angleworm taught you to better present your flies.

ANGLER QUIZ No. 10

By Carsten Ahrens

Handy Identification Tags

- | | |
|------------------------|--|
| —— A. Carp | 1. Has a jet black ear flap without a margin. |
| —— B. Bullhead | 2. Both cheeks and gill covers are entirely scaled. |
| —— C. Sucker | 3. Maxillary joint is directly below eye. |
| —— D. Yellow Perch | 4. Two barbles on each side of mouth. |
| —— E. Muskellunge | 5. Scales only on upper halves of cheek and gill covers. |
| —— F. Northern Pike | 6. Lips and mouth form a good suction disk. |
| —— G. Chain Pickerel | 7. Maxillary joint extends back beyond the eye. |
| —— H. Bluegill | 8. Has a humpbacked appearance. |
| —— I. Small Mouth Bass | 9. Scales on all of cheeks and halves of gill covers. |
| —— J. Large Mouth Bass | 10. Both parents guard the young. |

Answers on Page 16

Dangerous Sunburn!

By **ARCHIE BLACK**

Research Director, Coppertone Corporation



A SEVERE sunburn in the making. Haze, overcast or thin cloud cover do not block the rays of the sun that cause sunburn.

Most fishermen are so busy taking care of their tackle and other paraphernalia that they forget to take care of themselves. While they're landing that big 'un they may be running the risk of dangerous sunburn.

Recent studies of solar energy have made it possible for anglers to get a healthy tan scientifically, with a better chance of avoiding painful burns, especially in their first days of fishing.

Scientists have established that burning and tanning are caused by the same few wave lengths of ultra-violet energy in sunlight. They have also solved the problem of controlling the amount of these ultra-violet rays entering the skin by the use of chemical "screens."

At the same time, some long-held beliefs about how to avoid burning on or at the water have been exploded.

A hat, boat awning or shade trees, for instance, can be deceptive—if they are relied on as the sole means of protection. While each of these will effectively block out the direct rays of the sun, they offer no protection from ultra-violet rays reflected off the water—and these can often burn as easily as direct exposure. A false sense of security can also come from light fog or thin cloud cover. These usually diffuse, rather than block, ultra-violet light and severe burns can result on hazy days.

While ultra-violet light reflected off sand and water is a danger in surf-casting or salt-water fishing, mountain lakes and streams carry their own particular

brand of peril. This is because the thinner air makes ultra-violet rays stronger, and also because under cooler mountain conditions fishermen aren't as likely to feel the hot warnings of impending overexposure.

The delayed action of sunburning is another little-understood thing. Basically, it is the latent effect of ultra-violet energy. It is even possible to come home slightly red from a day's fishing, go to bed, and wake up with a painful case of sunburn hours later.

Generally speaking, the danger of sunburn is greatest in June and July in the Northern Hemisphere—from about noon to 3 p.m. Dark-complexioned men are less sensitive than their fairer brethren.

While carefully increased exposures each day is Nature's way of building up a tan, the fisherman can lengthen his time in the sun with greater safety—thanks to chemistry.

In recent years sunscreens in the form of lotions and creams have been developed. These effectively filter out enough ultra-violet light to lessen the danger of burning, but not so much that natural tanning is prevented. The more sun-sensitive his skin, the more sunscreening agent a fisherman should use.



THIS FISHERMAN also was fooled. Though well covered, exposed hands and face were burned, this time by reflected rays.

Following are six suggestions to anglers, especially those anxious to spend the maximum time in the sun in the first few days:

1. Remember that the intensity of the sun's burning rays is increased by reflection off water and sand; it is greatest around mid-day.
2. Remember that your hat and long-sleeve clothing can be used to control exposure.
3. Use a suntan product which contains a sun-screening agent from the very beginning.

Select one which suits your complexion—the more sensitive your skin the greater the need of a sunscreening agent.

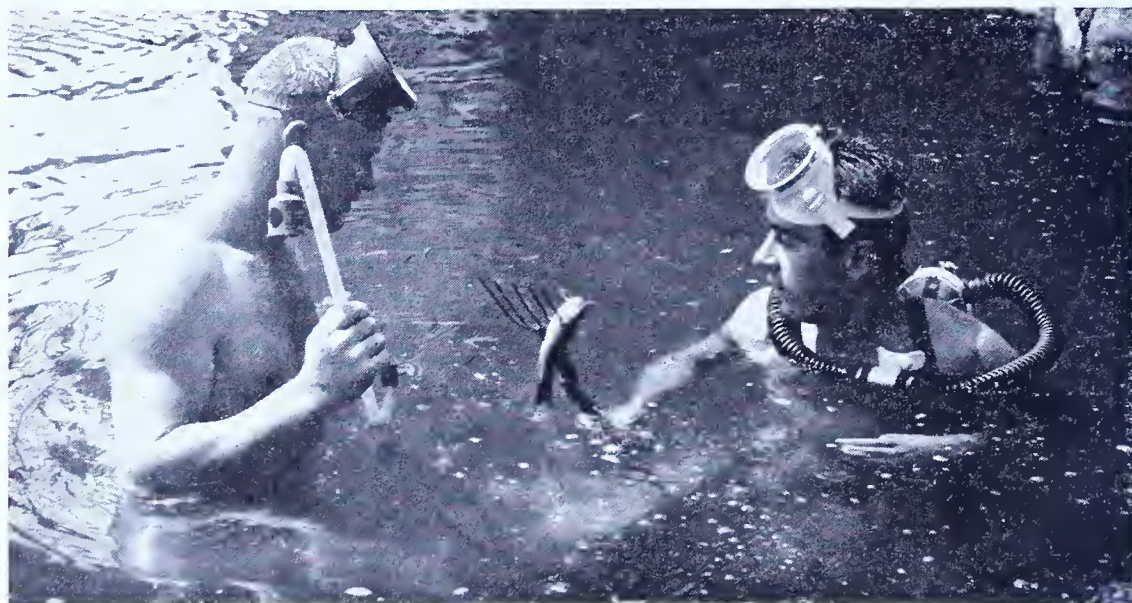
4. Repeat the application of suntan product at intervals during exposure.

5. Use sun glasses, a shield or other means of protecting the eyes from the intense rays of the sun.

6. If in any doubt, PLAY IT SAFE for the first few days.

What's Wrong Here?

(See Page 16)



Weather Facts for Anglers

There's been so much hokus pokus written about the effect of weather on fish and fishing that the average fisherman is inclined to throw his hands in the air and forget the subject. The best time to go fishing is still "any time you have a free minute," but certain weather factors do play a part in fishing results.

To aid those who have a hankering to fish with a thermometer in the tackle box and a solunar table in a hip pocket, the following weather facts for anglers are offered.

1. During the summer, pay close attention to the passage of cold fronts. Excellent results are obtained by fishing in the rain when such a front is passing overhead.
2. Fishing is best on a high or rising barometer, and is poorest when the barometric pressure is low or falling.
3. A barometer reading of 29.90 inches (equivalent sea level pressure) is average. Fishing is generally good above this figure and poor below.
4. Disregard slight fluctuations of the barometer unless they can be incorporated into a trend.

Fish these trends rather than one single reading. A trend indicates fishing conditions for a period of several hours or a day.

5. When the day is windy and the water rough, fish for muskie, pike and black bass in deeper water. Cast, drifting with the wind, or troll for best results.
6. When the water is calm but the sky is cloudy, fish the surface with top water lures. Early morning or late evening are also ideal times to use surface lures.
7. On clear, hot, summer days, especially when the weather is sultry, fish on the bottom with bait or deep running artificial lures.
8. Statistics indicate that most game fish strike best between the new moon and the first quarter and the change.

Experienced fishermen know and abide by these weather rules, but they also realize that both weather and fish are unpredictable.

Johnson Motors—Outdoor Facts

Counterfeit Catchables

The Wrong Kind of Trout Creel Insurance



By PAUL R. NEEDHAM

(Photos by Johnny Nicklas)

The expert trout fisherman—symbol of rugged outdoor individualism—is actually subsidized by his fellow anglers.

A long look at the costs and catches of trout reared to catchable size in hatcheries shows that the consistently capable fisherman can catch all the hatchery trout his license fee will pay for in one trip—and his conquests through the rest of the season are paid for, if unintentionally, by the less skillful angler.

The expert's "subsidy" is earned—every fisherman has the same chance at the catchables, and more power to the man who practices his art with skill.

But the sad fact is that both expert and duffer might enjoy better fishing if so much of their license money weren't squandered in hatchery raceways in the vain attempt to provide creel insurance for every fisherman.

The tendency of many states to continually pyramid catchable trout programs at the expense of habitat improvement or research seems indefensible on a long-term basis. Consider a study I recently completed of 244 marked trout experiments (see chart on page ?), showing that we have been kidding ourselves into believing that we can improve the quality of angling by increasing the supply of fish above and beyond those provided by natural reproduction.

A quick perusal of the findings covered in the chart

shows that the panacea of catchable programs is largely a mirage. The experiments summarized were carried out in waters in this country as well as Canada and were reported in 36 separate papers. The variety of areas tested and the completeness with which the projects were carried out confirms only one conclusion: costly catchable programs do not provide the answer to our fisheries problems.

Hatchery-reared catchables are poorly adapted to compete and survive with naturally propagated fishes that had to learn the hard way. Being protected in hatcheries from one to two years, spoon-fed, and accustomed to an easy life, when placed on their own they prove ill-adjusted physically and genetically, and are unable to withstand the severe conditions of an independent existence. This has been proved by the appallingly low returns cited in the panel. Possibly the reason for low survivals is that we are planting strains of highly inbred, mongrel stocks which, because of their hatchery life, are physical misfits in wild environments. Decades of selection for hatchery conditions would certainly be poor preparation for survival in competition with wild trout.

The evidence derived from these survival studies leads one to believe that the trout produced by present-day hatcheries should be used principally for planting



JOIN THE crowd. Catchables have just been planted. This is angling?

in "fish-out" streams or ponds or slaughtered and packaged for immediate consumption. It is rapidly becoming apparent that efforts to create fish "tenement districts" by dumping large numbers of trout into short stretches of stream, fail both because of lack of "living room" and ability to compete with resident forms already present.

Sportsmen Demand Creel Insurance

But still states continue with their hatchery programs, largely because of the sportsman's demand for more creel insurance.

Between 65 and 85 per cent of most state budgets for game fishes are allocated for the propagation of trout. But do parallel percentages of licensed anglers fish for trout? Questionnaires indicate that only approximately 30 per cent, in round figures, of California anglers fish for trout. And out of the 30 per cent who fish for trout, who catches the catchables?

Creel checks in California (using it as an example) have demonstrated that between 65 and 75 per cent of those who try for catchables, come away with empty creels. In other words, the bulk of those would-be anglers enticed with the sweet song of numbers of large trout being planted, come home empty handed. Another luckier group of 25 per cent of those trying for catchables may take from one to five fish. These, with the anglers who return with empty creels, total around 90 per cent.

At the other end of the scale, we find a few expert anglers who come home with their creels well filled with the bulk of the planted fish. These fishermen, of course, are in a minority. This select group of around 10 per cent catches over 50 per cent of the catchables.

Since 1948 over 4.3 million dollars has been expended in California on hatcheries. This has increased the production of catchable trout over 325 per cent. This is a large increase but we doubt if the quality of the sport has been equally improved. In a way it might be said that by planting catchables we are competing

directly with the operators of "fishout" ponds where you catch your trout at so much an inch or per pound. The main difference is that it's cheaper to catch hatchery-reared fish planted by the state.

Indeed, the state could save a lot of money by not going to the cost of planting catchables at all. They could set "fish-out" ponds aside at each hatchery where the angler, for a fee, could indulge his sport knowing that a 100 per cent return to the creel would be assured. This would have the practical advantage of having those anglers who catch catchables pay for them, too.

Many of us who prefer the quiet of a wild stream are taxed to support the catchable program without sharing its benefits. Assuming that catchables cost \$0.20 apiece as they are planted, and assuming a 50 per cent mortality after planting, then each fish placed in the creel costs some \$0.40 apiece. If your angling license cost you \$3.00 then, theoretically at least, you have had more than your money's worth after you have caught eight of them.

Cases are on record where single families consisting of two adults and two children fishing on two licenses (no fee for children) have caught 60 (creel limit 15) catchable trout in one day. A good bargain this, where for a mere \$6.00, \$24.00 worth of trout are obtainable.

Catchable Programs Hurt Angling

Is the quality of the sport improved regardless of where catchables are planted? I think not. To have to carry your own rock to stand on, to fish elbow to elbow with hordes of fishermen, is not high quality sport.



HATCHERIES CAN be a valuable fish management tool but catchable programs frequently impoverish needed fish research and habitat improvement.

Summary of Recovery Rates from 244 Plants of Marked Brook, Brown and Rainbow Trout as Reported in Published Papers*

Category	Number of Separate Experiments Reported	Maximum and Minimum Percentages of Recovery	Average Recovery Rate (Percentage)	Remarks
Like Plants of Fingerlings Made at All Seasons	32	36.4-0.06	7.40	Largest recoveries were obtained in Castle Lake, California, from 2-3 inch eastern brook planted following chemical treatment of the lake. Nineteen of the 32 plantings gave recoveries of less than 5.0 per cent.
Like Plants of Legal-Sized or Catchables Made at All Seasons	38	88.4-1.10	34.5	Creecy Lake, New Brunswick, Canada, gave the highest returns following predator control operations.
Stream Plants of Fingerlings Made at All Seasons	21	14.0-0.00	2.5	Ten of the 21 experiments yielded less than a 1.0 per cent return. Cost of trout that survived in one Oregon experiment was \$28.53 per fish.
Stream Plants of Legal-Sized or Catchables Made in Advance of the Angling Season	54	82.0-2.60	28.6	Of the 54 experiments reported, 24 showed returns of less than 20 per cent.
Stream Plants of Legal-Sized or Catchables Made During the Open Angling Season	68	92.2-1.00	41.3	Rush Creek, California, produced the highest reported returns. In 26 of the tests, returns were less than 30 per cent.
Stream Plants of Legal-Sized or Catchables Made After Close of the Angling Season	31	88.6-0.02	16.8	Highest returns in this group came from Spring Creek in Pennsylvania.
Totals and Averages	244	Max. 92.20 Min. 0.00	27.2	Average is based on all sizes of fish planted regardless of species or time or place of planting.

*Inclusion of survival data from around 25 papers had to be omitted because of lack of pertinent information or artificial conditions of the experiments or because the subject matter did not pertain precisely to the problem at hand. Since no marked differences were observed in the survival rates reported for brook, brown or rainbow trout, the data for all three species are grouped together in this table.

evidently permits survival of adequate breeding stocks each year. These are providing all the trout necessary for the available "room and board." Many waters like Sagehen Creek that do not need hatchery fish at all are still being stocked.

Recent trends towards setting aside certain lakes, streams or sections of streams for fly fishing only or where "catch-and-put-back" areas have been designated, will do much to improve the quality of the angling. If artificial lures and barbless hooks are required in such areas, a lot of fishermen will be able to enjoy quality sport, including the experts. And that, basically, is what we are trying to provide.

Natural Spawning Key to Success

Fish and game officials know that from 75 to 85 per cent of all trout creeled originate from natural spawning, not hatcheries. This being the case and since natural propagation is carrying the main burden so far as angling is concerned, why not give more funds for research and experiment to aid and abet this process? If work is started along these lines, there will be less money for rearing catchables. This means a ceiling

must be set for the hatchery program that will leave sufficient funds for badly needed new and basic attacks. If such a ceiling is to be set it will first be necessary to designate certain lakes, whole streams, or sections of streams as "fish-out" or catchable trout areas and determine the number of fish that will be required annually to stock these waters.

After designation of the catchable waters, all other lakes, streams or sections of streams might be declared "natural fish" waters in which most of the reliance for providing fishing will be placed on natural propagation alone. I use the word "most" advisedly. It is well known that in some lakes lacking suitable spawning inlets or outlets, the planting of fingerlings may help to maintain angling and stocking of such waters must of necessity be continued. Where winter-kill of all fish life occurs, restocking is the only remedy. The same would apply to streams denuded of fish life by pollution, flash-floods or other causes. Streams designated as "natural fish" streams would never require stocking except where catastrophes occur. Thus stocking would be used only where it has demonstrated its effectiveness.

Stocking game animals or fishes for the purpose of establishing self-sustaining populations is sound and its value as a management tool has been proved many times. But where all suitable habitat has already been stocked, the problem then becomes one of proper use of the hatchery products in areas already containing wild populations; and proper use certainly does not mean endless stocking of catchable trout in waters

In the mad scramble to get their money's worth of catchables just dumped from the fish truck, the gentle art of angling becomes degraded and despoiled by greedy and unsportsmanlike "meat" fishermen.

As the plantings of catchable trout increase, the quality of the sport decreases. The planting of catchables is the cause of the crowding. On a stream where no catchables are planted, you may see a lot of anglers but usually not elbow to elbow and the practice of stream ethics there reflects a higher standard of angler effort.

Natural propagation would seem to be the answer to many of our fishing woes. A good idea of just how effective natural propagation can be is illustrated by research done at the Sagehen Creek Wildlife and Fisheries Project located near Truckee, California.

A creel census operated on the upper five miles of Sagehen Creek over the past six years has shown that anglers catch between two and three thousand trout weighing between 200 and 300 pounds each year—all of which come from natural propagation since stocking of hatchery fish was stopped there in 1951.

By annually sampling fish in the stream itself in a series of 10 short sections by pumping and draining, estimates of total fish available for the catching have been made. The catch of fish four inches and up in length has averaged less than 40 per cent of those available each year. Catches have averaged between 1.08 and 1.88 fish per angling hour. This is indicative of good fishing provided solely by natural spawning. There is good escape shelter and the exploitation rate

presently or potentially capable of providing good fishing through natural propagation.

Research Sacrificed to Hatcheries

We are still in the "Model-T" days in so far as our understanding of the physiology and genetics of game-fishes are concerned. There are great strides to be made in research, and in the application of research to management programs.

Unfortunately it is still easy to get millions for hatcheries, and still difficult to get even a pittance for research. How long can we afford to allow our fond but misplaced faith in rearing catchable trout crowd out stream improvement and other research-based management programs?

If the fishing needs of the future are to be met, if we are to obtain the most from our shrinking recreational waters, a drastic change in attitude and programs is essential. Only then may we be able to approach the kind of "creel insurance" that we all dream about.

—Outdoor America

The author, Professor of Zoology and Fisheries at the University of California, Berkeley, and a national authority on fisheries management, is a national vice president of the Izaak Walton League. Dr. Needham has published some 100 papers and three books during his career.

This article has been revised by the author from an address, "New Horizons in Stocking Hatchery Trout," presented at the 24th North American Wildlife Conference and appears here with permission of the Wildlife Management Institute.

What's wrong here?

(Answer to photo on page 12)

While in some states and in the off shore areas along the nation's coast line "lung" equipped spear fishermen engage in their activity without legal restriction, the spear or whatever other device commonly used by this new breed of underwater devotees, is illegal in Pennsylvania waters.

For completed edification, section 50 of the Pennsylvania Fish Law provides as follows: "No person shall use any device, means or method whatsoever . . . for taking fish from the waters within this commonwealth, except the following: (a) Game Fish, not more than two rods and two lines and one hand line with not more than three hooks attached to any line. (b) Bait fish and fish bait, two rods lines with not more than three hooks attached to each line; a dip net, or minnow seine not over four feet square or in diameter; a minnow trap with not more than two openings which shall not exceed one inch in diameter. (c) Any species, when fishing only through holes in the ice, not more than five tip-ups or other devices. (d) Except as hereinafter provided in the case of rough fish or trash fish, it shall be unlawful to take or attempt to take fish of any kind by the methods known as snatch fishing, foul hooking or snag fishing, or the taking or fishing for fish with hook or hooks, baited or otherwise, attached to rod or line or other device for the taking of or fish-

ing for fish with any device whatsoever which may be used to capture any fish by engaging such device into or with any part of the body of the fish. Nothing in this section shall prohibit the use of long bows and arrows for taking or killing earp."

Therefore, a spear is an illegal device. Similarly, an "aqua-lunger" would be prohibited from taking fish by hand, a feat that has been turned by many.

Though it may seem silly to mention it, if a lung equipped fisherman chooses to set up shop somewhere on the bottom of a lake or river with a rod and line and baited hook, he would be fishing in conformance with the law. Likewise, were he to collect bait in conformance with paragraph (b) above, there would be no problems with the fish warden.

The penalty clause (section 51) attending section 50 provides: "Any person violating this article shall on conviction be sentenced to pay a fine of \$20 and shall forfeit to the Commission all devices unlawfully used. In addition to such penalty the license of such person may be revoked for one year for the first offense and two or more years for the second offense at the discretion of the Commission." Forfeiting devices as set forth above would include, the aqua lung as well as the spear or underwater shooting device.

Answers to ANGLER QUIZ No. 10

4	A	9	F
10	B	2	G
6	C	1	H
8	D	3	I
5	E	7	I

Organ Grinding and Jigging In the Allegheny River

By **STEVE SZALWEICZ**

Photos by Bob Parleman

Slow at some places, fast at others, but always twisting. That's the Allegheny River as it courses through Venango County. And there, walleye and smallmouth bass fishermen have come to know and like a different style of fishing. "Organ grinding and jigging" they call it.

The modus operandi is from Florida, by way of Canada. The implements are the conventional spinning outfit, graced on the business end by a "Barracuda" jig. The latter when properly "jigged" does a tantalizing dance on the rocky and gravelly bottoms of the river. It's the reel of the outfit that suggests "organ grinding."

Put the two together, in the hands of even a semi-pro who can read the fishy spots and, man and boy, the Allegheny River's eddies and swift riffles will show you fishing comparable to the best. Yes, even in August.

And bass and walleye being of the same temperament and inclination in any locale to their liking, there is no reason to believe that similar action would not be forthcoming on the same approach in other Pennsylvania big rivers, notably the Susquehanna and Delaware.

Before proceeding here, I want to set the record straight on two points. First, I am not thumping the drum for any tackle or lure. Some people can't and never will be able to catch fish with a "jig." But then there are some who can't catch them on worms either.

Secondly, I don't normally cotton to reading the "me and Joe" type of fishing tale much less writing one. But this is the way this jig business happened to me, so here goes.

It all started in Canada several springs ago. Two Venango "sports"—the Game Commission's Bob Parleman and I—had given up on the trout fishing near Denbigh, Ontario, after three days of sweat, toil, and scheme with nary a knock.

But before packing and heading back for the hills around home—that's Oil City, Pa.—our lodge owner allowed some fine walleye could be taken from nearby Cedar Lake by trolling.

"Just the other day a fellow from Ohio caught a five-pounder on a doo-hickey he called a 'jig,'" said he and added, "It's nothing more than a nylon skirt tied to a lead, bullet-shaped body, with a built-in single hook. The skirt partly hides the hook."

Buddy Bob allowed he had a couple and would give them a whirl after supper. Come that time he was still of the same mind and I invited him to have fun, adding that some guys don't know when they're licked. It was my reasoning that if the best acting spoons, spinners and wobblers wouldn't produce for the fishermen we talked to, how did he expect the "junk" in his tackle box to do any better.

Besides, this half of the duo was tired and the sack in the cabin looked softer than the boat seat. Also,



THESE ARE types of "jigs" this story is about.

besides, I was in no mood to be conned by a camp operator about to lose a couple of lodgers.

It must have been about ten p.m. when he ambled into the cabin.

"How'd you make out," we "how'd" him from under the covers.

"Caught about 60. That jig really works," he how'd back.

"G'wan, you're crazy," and that was all there was out of me until the 6 a.m. lodge reveille clanged both of us out of bed. And even before the first yawn was negotiated I took up where I left off the night before. "Did you say you caught 60 walleye on that jig thing? Where are they?"

"They were all small, so I let 'em go," was Bob's matter of fact reply.

Spoken like a true fisherman, I mused. The truth was not in him, even early in the morning.

"After we eat I'll show you how the thing works," he promised and hoped we could find where the big ones laid.

Little time was lost at the breakfast table and we were soon on the lake in the general vicinity of where, as Bob put it, "the walleyes wouldn't let the jig alone the evening before."

On the second cast he was back in business. While I was getting the hang of things he ran up a string of seven on seven casts. They were small—all around 16 inches. But after we moved into deeper water they became three- and four-pounders, as consistently. And it was easy fishing. On a normal casting effort, as the jig cut easily through the air, eighty-foot casts were routine. Standing in the boat, we would then wait until the lure settled on the bottom—some 12 feet we judged—take up the slack and go to work. Lift the rod-tip smartly to eye-level, then lower it to waist-level and quickly retrieved the slack. Raise, lower, retrieve.

In the clear depths we could see the whole process. The jig bounded along the bottom like an aquatic grasshopper. Sometimes a walleye hit on the first hop or jigging motion. Other times they upped and downed after it, almost to the boat, before taking.

Yellow perch also responded. Great schools of them came out of the weeds and cruised excitedly under our boat. Later, bullheads, northern pike and smallmouth bass hit with equal vigor as we moved into waters of their liking.

All thought of heading home were forgotten.

For the next three days our fishing was foolproof, fabulous, fantastic. On one occasion, workers at a lake-side sawmill stopped to watch us catch and release

four-pounders—walleye, that is—almost one after another. We suspect we were otherwise spied on because not a few calls came to the lodge asking, "What are those fellows using for bait?"

The lodge owner played dumb. And he implored us not to leave any jigs in the boat, and please not to tell the natives. "They'll clean the lake out," he wailed. There was little doubt that he regretted his earlier tip. Anyhow, not wishing competition, we complied.

Meanwhile, with such success, we felt that any lure would take as well in this lake. Not so. We went back to our brightest spoons—our wobblers, our buck-tails, and even nightcrawlers and June bug spinners and fished them every conceivable way. By the time we were ready to head home we were convinced they just weren't in the same league with the jig.

But the big question became, would the jig work on the Allegheny? In the river, the walleyes lie in the deep holes in the heat of the day and move to the fast, high riffles at the heads and tails of the eddies in the evening and morning.

Conventional lures seldom go down to the deep haunts or into the pockets in the heavy water. The Venango County fishermen who did work at it here always had trouble keeping their lures where they wanted them long enough for slow-moving walleyes to make up their minds. And regardless of what some say, the species doesn't cruise about shore lines much in these parts except possibly at night. Usually he's down deep or holed up behind a big boulder that breaks up a swift current and slows up passing feed. What they would stir up in river smallmouth was another poser yet to be answered.

It didn't take too long, however, to find what the jig was worth in back-home waters.

One evening after bass season started, Bob called, "Come on down to Franklin tomorrow and I'll show you some fishing!"

"With jigs?" asked I.

"With jigs!" answered he.

Next day, the two of us were in the Big Rock eddy, a mile or so below Franklin. It was about noon and hot.

From his end of the boat came, "They were boiling the water here the other night. I caught and released about 25 bass and 4 walleyes in a couple hours. The jig works here too. Watch."

He picked out a fast stretch of water with slow dimples showing that big rocks lay scattered about the bottom. Into one of the pockets his yellow jig settled. On the third cast the water broke as a fat 14-inch smallmouth walked the surface on its tail, wearing the bright yellow jig in the corner of its mouth.

In an hour's fishing thereafter a dozen bass and one walleye were caught and released.

Periodically through hot August, cooling September, chilly and beautiful October and cold November, we experimented further. The jig and spinning rod took bass and pike consistently in "fishy" spots in the river.

We fished at Kennerdell, St. George, Belmar, Big Rock, Reno, Pumphouse Eddy in Oil City, Roekmere Peaceful Valley, Ahrens ville, Walnut Bend, Oleopolis



THREE OLD hands at jigging. L. to R., John Eagles, "Ditch" Shuffstall and Don Lash of Franklin, Pa., with a half dozen walleye taken on jigs from the Allegheny's Big Rock eddy just below Franklin's Eighth Street Bridge.

Henry's Bend, Eagle Roek and President and Tionesta. The jig was productive in all these popular eddies. It was no fluke!

Word naturally got around. Those who stayed with the jig, with practice and patience, found it an almost sure way to have tight lines.

To date I have not heard of its use spreading to either the Susquehanna or the Delaware. But as implied earlier, I'll give odds that it will work in those rivers too. Anyhow, if you're minded to give it a whirl, here are some tackle tips:

The Rod

After trying several different rods, we settled for a 7-foot medium action spinning rod. It provides the maximum sport and has sufficient backbone to set the hook well. However, one fellow caught fish for fish with us right off the end of the boat with a short casting rod and bait-casting reel. But he later converted to spinning for maximum sport.

The Line

For boat fishing we have settled on monofilament line of a four-pound test for jigs less than one-quarter ounce, and six-pound test for those between one-quarter to one-half ounce. If you are going to fish from shore or wade, your chances of retrieving snagged lures are better with a bit higher test lines.

The Reel

Any of the present-day spinning reels have proved satisfactory. As stated above, one of our companions did himself justice with a conventional type level-wind reel.

The Jig

A variety of the commercial fresh water jigs on the market today have been used with varied success. The circumstances often dictate the lure. We have settled generally for the Barraeuda (Super-Dude) for the all-around use, weight one-quarter ounce, which comes in a 2/0 hook, tied with a nylon skirt. The jig is durable and ideal for maximum casting results. Colors vary also, with our preference being all white, red and white, all yellow, yellow and red and the all black. A nylon skirt, from our observations, presents the best action and is more durable than those of other materials. The one-eighth ounce jig has its place and should be a part of a selection. It proved a killer more than once in shallow water along shores when the fish are wary. For a single selection the quarter-ounce has the nod. In deep, fast water or at unusual depths over 15 feet, the seven-sixteenths and half-ounce weights are the ticket.

Summary

Originally, we are indebted to one "Doc" Howe for alerting us to the possibilities that jigs offer in fresh water, though it took that Cedar Lake episode to set us to using it. Actually, the jig is one of the earliest types of artificial lures used. It is known that the American Indian used the principle effectively.

Throughout this piece, effort has been made to keep its information simple, though our success with the



TEN POUNDS of smallmouth bass in three packages "jigged" out of the Allegheny at Rockmere.

jig has been achieved more or less by trial and error. In conclusion, here are a few do's and don'ts:—

1. Keep your hooks needle sharp, sometimes the fish will take a jig with little "feel" to the fishermen. There is seldom the smash one will encounter with other lures.

2. Practice and only practice will give the feel of a fish rather than that of another object. But don't pause to question. When in doubt, set. We still get fooled, but we have fooled a lot of fish too.

3. Until you become adept, don't cast beyond 15 degrees off the direction of the current. Avoid bowing in the line unless you are sure of the bottom.

4. A quarter-ounce jig will usually sink at the rate of 1½ feet per second. Start counting when the lure hits the water. In fast water, stop the lure in mid-air. Too much slack line will put a bow in the line and the lure under a rock.

5. You may tie the lure directly to the line unless you're after northern pike, then use a flexible wire leader.

6. The cinch knot has proven adequate.

7. Select a jig with the hook riding up and you'll get hung up less.

8. Vary the retrieve. Slow or fast, we have had success with all of them at times. The experimenting is up to you.

9. We think that the fact that we get our lure down to where the fish spend most of their time, especially the big ones, has produced our fish. If you jig, you will then agree that the proper action resembles many of the critters that make up the diet of our fish. To that end, we have caught more fish and bigger ones with a jig than with any other lure. And after all—that is a fisherman's objective.

In fact, this whole business of organ grinding and jigging is up to you. And if I know fishermen few will become overnight converts. But you can never say I haven't done my part.

LIVING IN CAMP BREAKING CAMP CARE OF EQUIPMENT.



By JOHN F. CLARK

(Part Three—Concludes Series)

Living in camp can be almost as comfortable as living at home. Notice we said *almost* as comfortable. You won't find any innerspring mattresses, no place to plug in an electric coffee maker, no hot and cold running water, etc., etc. But then if you'd wanted it that easy you wouldn't have gone camping in the first place. No there aren't very many modern conveniences in the woods. However, there are quite a few substitutes that will make camping more pleasurable.

For example, you've already made up your bed. But, have you tried it out yet? Well then crawl in the tent and stretch out full length just as if you were turning in for the night. Lay there for five or ten minutes. Feel those small sticks and stones jabbing you in the back? Take our word for it, they'll feel like king size boulders and saw logs long before morning. O.K., drag out your sleeping bags and ground cloth and clear away all the debris. Then lie down again and mark the position of your hips and shoulders. At these marks dig a slight depression with your shovel. This makes for more comfortable sleeping. Pine or hemlock boughs also make a good substitute mattress. However, you can't always cut these at the site so you would be wise to get used to sleeping on the ground. If you intend to do a lot of camping your best bet would be an air mattress. When deflated they fold into a small light package. You'll find that they add a great deal to your sleeping comfort. And what's more important than a good night's sleep?

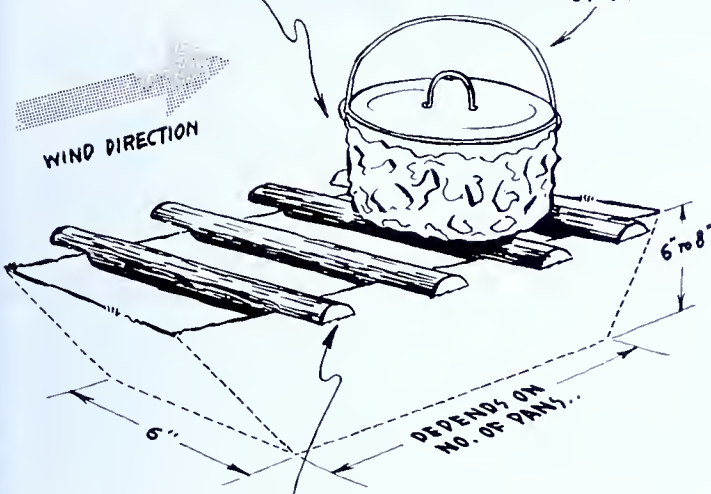
So much for beds, let's get on with supper: Baked potatoes, dehydrated soup, bread, butter, coffee, or tea, or instant chocolate. When it comes to camp cooking your fire plays an important role. The average beginner will invariably build a bonfire to cook over. The results are always the same: Burned pots, pans, fingers and food. Singed eyebrows and bloodshot eyes are another mark of the tyro.

The ideal cooking fire is laid in a trench 7 or 8 inches deep, six inches wide, and length depends upon the number of pots and pans you are going to use. The sketch shows how to dig it. A flat wire grill makes cooking a lot easier. Or, if you don't have a grill, green sticks of uniform thickness laid across the pit will serve the same purpose. Start your fire with fine tinder such as pine or hemlock twigs. Then as this catches, add a little larger wood and finally add your biggest sticks. (They shouldn't be more than 2" in diameter. Anything larger should be split.) Add enough so that when the wood burns down the pit will be filled with coals to within about 2 inches of the top. Scrape aside some of the hot coals, lay in the foil wrapped potatoes and push the coals back over them. Then lay the grill or green sticks over the pit and set on the pots to heat water for the soup and coffee. Prepare the soup according to the directions on the package. By the time it's finished the potatoes should be baked. Test them by poking a small stick into them. If it goes in easily they're done, if not let them bake a little longer. Those coals will stay hot for quite a while and will give you plenty of time to cook your meal without adding any more wood. Cooking over coals will eliminate blackened pans, however they will scorch a little. To avoid this wrap the bottoms with aluminum foil. When your meal is finished clean up at once. Any leftovers go in the garbage pit. Avoid scattering food scraps about the campsite, otherwise you'll be visited by four legged scavengers during the night. Clean up your pots, pans and dishes with soap pads. Here again we advise you to do a good thorough job. Get off all traces of food and grease. Any experienced camper will tell you why this is important. Place all your food supplies in the waterproof sack and hang it up on a tree limb away from any and all scavengers. Clean out the fire pit after the

ALUMINUM FOIL
AROUND POT..

KEEP BAIL
UP..

WIND DIRECTION



PUSH ENDS OF STICKS INTO GROUND TO
PREVENT ROLLING.. KEEP 'EM LEVEL.

ashes have cooled, and place some tinder and small wood in the pit so you'll be all set to start the breakfast fire. Gather up all loose gear and store it in your pack or tent. Like we said before, the mark of a good camper is a clean campsite.

No meal should take more than an hour to prepare; from the time you light the fire to the final cleanup. With a couple of camping trips under your belt you'll find that this time can be cut to three-quarters of an hour, or even a half-hour, thus leaving you more time to fish or loaf around. Follow this same procedure that we've used here for all your meals and you'll avoid a lot of confusion and wasted time.

O.K., everything shipshape? Then let's dig into our fishing gear and go catch tomorrow's dinner. A word or two about your fishing gear. When you're through fishing for the evening don't stack your rods around a tree, else you might find the cork grips chewed away by porcupines. (Seems they really go for the salt that comes off your hand.) Take them down and stow them in their cases. The fish that you catch (if any) should be wrapped in aluminum foil and placed in the food sack. By the way, while you were getting out the fishing gear, you should have also placed your flashlight in some convenient location so if you need it you'll know where it is.

Before you turn in for the night take a final check around camp to make sure everything is stowed away. Check the tents to see that they're properly erected. (See Part II, Anyone For Camping.) When you're satisfied that all is in order it's time to turn in. Man alive, doesn't that sack feel good!

Shucks that's about all there is to running an efficient camp. Before you know it it's time to pack up and go home. You break camp in the reverse order that you set it up. First, put your fire completely out. Fill in the fire pit and tamp it down good. Scatter the leaves and pine needles over the fire circle to make it look as though you had never been there. By the way, if it's raining leave the tarp over the fire area till last. Next make a thorough policing of the entire campsite, picking up everything that doesn't belong there. "Gil-

bert the Guide" has shown you what to do with it. Fill in the garbage pit and latrine, tamping the earth down solid. Then pack your gear in the same way that you did when you started on the trip. If it's raining you can pack under the tarp that you left up. When everything is stowed, take down the tarp and tie it to one of the packs. Then make a final inspection tour to see that the site is in as good a shape as when you arrived. (You should leave it in better shape if possible.)

When you get home unpack immediately and put everything in its customary place. Make a note of items that you have torn, broken or lost. (Yes, even the most careful camper will at times lose equipment.) Try to replace or repair them as soon as possible so that you'll have them for your next trip. Items such as your tent, ground cloth, sleeping bag and extra clothing should be hung out on the clothes line to be aired and dried thoroughly before you store them. Never, NEVER put them away damp or they'll mildew.

We hope these articles will help you get more enjoyment from your camping trips. However, the only way to become a good camper is to go CAMPING. So get out your gear and head for the hills.

Good luck and keep your firewood dry.



GILBERT THE GUIDE

THE CAMPERS FIRST DUTY IS TO
THE LAND OWNER.... THEREFORE,
BEFORE YOU LEAVE A CAMP SITE,
MAKE SURE IT'S IN AS GOOD
(OR BETTER) SHAPE THAN YOU FOUND IT!

POLICE THE AREA THOROUGHLY..

BURN ALL DEBRIS AND
GARBAGE THAT WILL
BURN.....

GATHER OTHER
CAMPERS DEBRIS
AS WELL AS
YOUR OWN.

... BURY THE REST,
IF RECEPTACLES
AREN'T PROVIDED
AT THE CAMPSITE.
PACK THE DIRT
DOWN SOLID.

THE WELCOME MAT WILL BE OUT
IF YOU LEAVE A CLEAN SITE!

JOHN F. CLARK —

What Do Game Fish Eat?

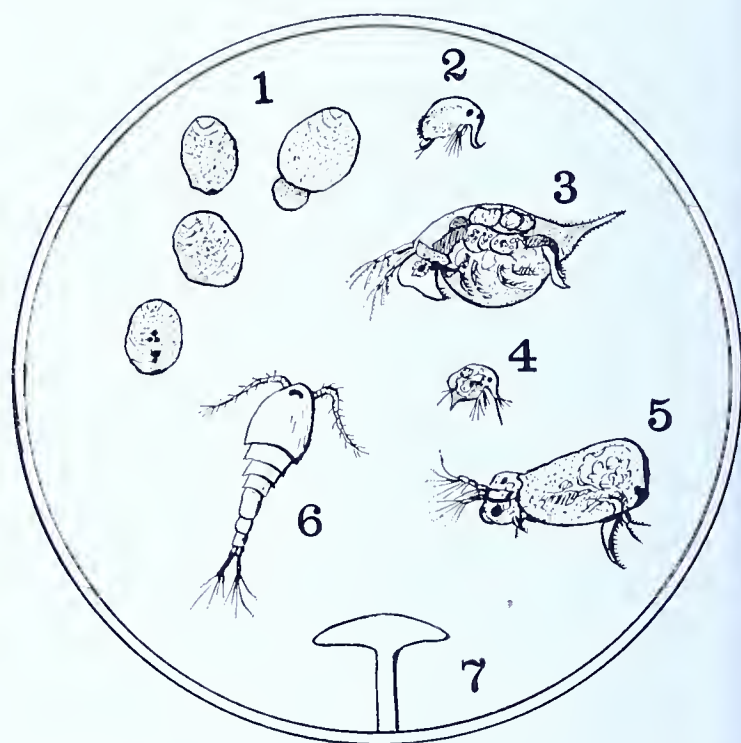
By **DR. LEON A. HAUSMAN**

(Illustrations drawn from the microscope by the author)

What do game fishes eat? What a question! our readers will say. They eat all sorts of things; what game fishes do you mean? Well, let's take the basses, the large mouthed black bass, if you like—and what fisherman does not like it! Not long ago the writer opened the stomach of a large black bass and spread out on several glass slips (for microscopic examination) a mass of fragments. Well, you will be surprised (or perhaps you won't, if you know your fishes!) at what the microscope showed this particular bass had in its tummy at the time of its capture. Although there were a great many fragments that could not be identified, yet we found evidences of these "critters" that this particular bass had eaten:—water bugs (the larger species such as *Belostoma*, *Benacus*, and *Lethocerus*), water beetles (the large diving beetles), fragments of the shells of pond snails, fragments of thin young mussel shells (very much crushed), fish scales (not identifiable), numerous bone-fragments, probably from salamanders and small frogs, and all this mingled with a heterogenous pulpy mass, in which some plant cells were recognizable. One object was of especial interest to the writer, namely a small pearl, from a mussel, about the size of the head of a common pin, much etched, and probably well along in the process of disintegration. So this bass was taking calcium pills, was he? Well, he at least took one; there was the evidence! Of course there was much in the stomach of this particular fish that was unidentifiable—just a pulpy mass all ready to be passed down into the intestine for absorption. It is fortunate that these fishes do not chew their food, but bolt it as fast as they can, fortunate, we say, for the stomach-analyst, since it leaves so many fragments that are diagnostic. Do I dare tell the (absolutely true) story of a man of the writer's acquaintance, who had "put down" a meal of steamed mussels (of the salt water species, the Blue Mussel); had swallowed, so he said, a lot of tiny little pearls. "There now," he remarked, "I shall be just like an expensive watch; I shall have jeweled movements."

The bass, like other fishes, and in fact like all animals, eat creatures smaller than themselves; the smaller creatures in their turn, eat smaller ones still; these eat smaller still, and so on and on until finally we come to the end of all this eating line. What is the end of it, you will ask. Well, the animals which stand at the end of it are so very small indeed that they can be seen only with the highest powers of the light, or optical microscope. But we cannot stop there—but yes, we must, in this particular article, for to attempt to tell the whole tale successfully would take many more than all the pages of this present issue of the *Angler*. So we will stick to the creatures that can be seen with the

light microscope. But before saying anything about them, we must stop long enough to remark that the fishes we are considering are all animal eaters, not plant eaters. But in the stomachs of some of our native fishes the "squinter through the microscope" sometimes sees fragments (and often whole individuals) of the smallest flowering plants in existence, a plant just as a daisy or a violet is a plant; with blossoms, male and female, which set seed. And this is so very unusual a plant, or I should say a plant so very little known (though it is common enough in ponds and lakes), that we have pictured it in Fig. 2. Its name is



1. **THREE PLANTS** of Pygmy Duckmeat, or Water Meal, the lowest one showing position and relative sizes of blossoms (black dots).
2. The "Elephant Shrimp" (*Pleuroxus*), a great protozoan-feeder.
3. *Daphnia*.
4. *Bosmina*.
5. *Sida*.
6. *Cyclops*.
7. Head of a Common Pin for size-comparisons.

Pygmy Duckmeat, or Water Meal. There are several kinds of duckmeats that are frequently found in the stomachs of carnivorous fishes, eaten, apparently for the same reason that a cat will sometimes eat grass probably for the sake of combating constipation.

But in the normal food-chain of our game fishes and we are thinking now of fresh-water fishes (with

bass and the like as examples) we find the larger fishes feeding on smaller ones, which in their turn feed upon such creatures as small frogs, salamanders, aquatic worms, tadpoles of various species of frogs, large insect larvae like the hellgrammite larva of the dobson fly, the large nymphs of several sorts of dragon flies, water beetles, water bugs (like the so-called Electric Light Bug (*Lethocerus*, and others). These in turn feed upon forms still smaller, such as mosquito larvae (or "wigglers"), small damselfly nymphs, the crawling water beetle group (*Halipilidae*) of which there are scores of forms, and their larvae. Then follow the threadworms, hairworms, bristleworms, tiny molluscs and tiny snails—the young in most cases—flatworms, hydras, the wheel-animals (*Rotifers*), and a host of others—but our space will not permit a complete catalogue.

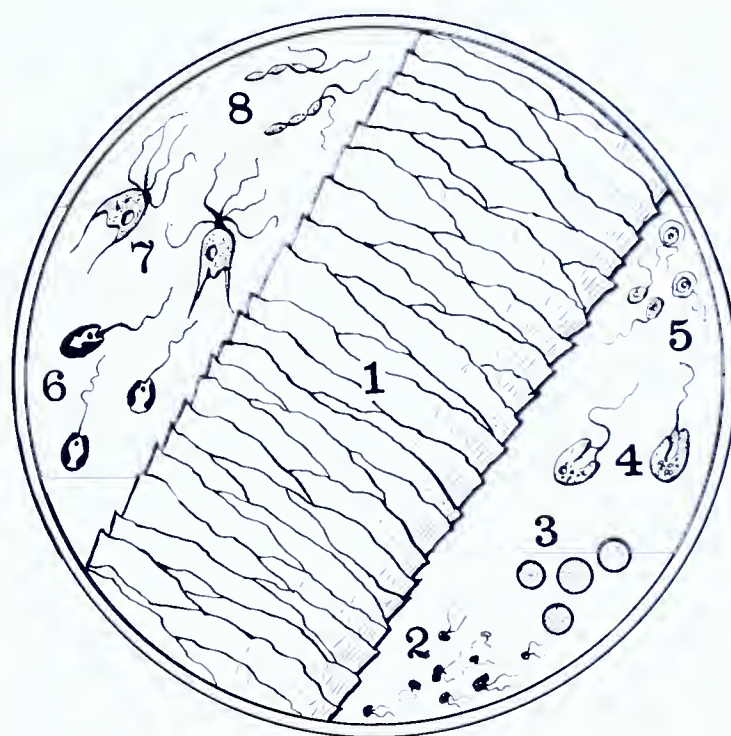
Our fresh waters teem with small crustaceans: fairy shrimp, water-fleas, water-hoppers (*Cyclops*, etc.), copepods, "pin-clams" (ostracods, really crustaceans), tiny water-spiders or water-mites, and so on—to list all these important, yes, basic, food-creatures would require a small book!

In Fig. 2 are shown some of the commonest forms of tiny crustaceans, always present in the stomachs of the smaller fishes upon which larger fish feed. In Fig. 2, No. 3 (*Daphnia*) is excessively common. This minute form (compare it with the pinhead in the figure), in warm weather regularly produces eggs every two or three days. Within the space of two months or less, *Daphnia*, piling up its progeny in geometric accumulation fashion, will roll up the respectable total of some thirteen billion descendants! And this is only one *Daphnia*, if you please! Think of a body of water teeming with *Daphnia*, all behaving likewise! Think of numerous other species of minute crustaceans, and of the multitudinous numbers of individuals of these numerous species, all doing more or less the same reproductive job! And so it goes. No. 5 (in Fig. 2) is a form called *Sida*; No. 4 is *Bosmina*; No. 2, though very small indeed (only about one-half the diameter of a pinhead), is so common as to cause everyone who looks through the microscope to exclaim: "Why, it looks like a tiny elephant." And so it goes under the name of Elephant Shrimp. No. 6, *Cyclops*, is well known even to junior microscopists—its name referring to its one eye (or rather eye-spot, for the structure forms no image). Everyone knows the old story of how Ulysses cleverly put out the one eye of the giant, Cyclops. Cyclops and some of its relatives are popularly known as water-hoppers because of their jerky mode of swimming.

But the minute and ultra-minute crustaceans and others feed on animals much, yes very much smaller than themselves. And a great bulk of this food is made up of the truly microscopic single-celled animals known as the protozoa. These, with but a very few exceptions, are entirely below the range of the unaided eye. *Paramecium* (which every high school biology student has seen) is just about visible as a pin-point of light as it swims through the water. But the whole race of

protozoa are in a world never seen except by those who can enter it through a modern compound microscope. And yet it is beyond doubt the most thickly populated world on our planet! A single droplet of pond-water may contain thousands of individuals (of perhaps a score or more of different species) of these "microcritters"—as one of my students once named them; and a very good name it is, too!

Look now at Fig. 1. Through the center of the circle (representing the field of the best of the compound microscopes) runs a portion of a single hair-shaft from the writer's head. Then look at the minute protozoa swimming about in the water on each side of it. And



1. **RUNNING OBLIQUELY** through the center of the circle, a portion of a single shaft of hair from the writer's head, to give the scale.
2. **One-Sided Darters**, showing variety of forms and sizes.
3. **Several red corpuscles of human blood.**
4. **Channeled Flagellate.**
5. **Various forms of Monads.**
6. **Black Cup.**
7. **Six-Tailer.**
8. **Twisted Flagellate.**

even though there is a thin cover-glass on the top of this tiny water-drop (to flatten it out), yet there is quite enough depth of water for these protozoa to swim around, and up and down in! How big, really, is this hair, people always ask, meaning how great is its diameter. Well, roughly about 80 to 95 microns. And what is a micron? It is a unit of microscopic measure, about one twenty-five thousand four hundredths of an inch long. Now you can see about how large (or rather how small) some of these protozoa—these "microcritters" are. And yet they are the basis the rock-bottom, very largely of all the animal life piled up successively above them. But where do the plants come in, you will ask; I thought vegetable life

was the basis of all the rest of it. So it is, in another sense; but we are considering only the animal successivity now. That is all we have room for—and we shall have to skimp that.

These protozoan forms whose pictures you see in Fig. 1 are all single cells. Animal cells, by and large, are microscopic (of course there are exceptions. Did you ever see anything in this transitory life that didn't have its exceptions?). Some of the very small cells of our own bodies are those little circular cells in our blood stream, the red blood cells, or erythrocytes. They are often useful in comparison with minute objects in the microscope, for they are a remarkably uniform 7 to 8 microns in diameter. A group of these tiny erythrocytes, taken from the tip of the writer's little finger, is shown in Fig. 1, No. 3. (So you see, dear Reader, that the writer has actually shed blood over this article!)

The smallest of the protozoa, the single-celled animals, are known as the whip-bearers or Flagellata (from flagellum, Latin, a whip). They move through the water by beating and twirling and coiling their slender whips this way and that and move in the direction in which the whip extends. Some sweep little fragments of plant and animal material into a sort of "mouth" at the base of their flagellum; many soak up (obtain by osmosis, if you want to talk physiologically) dissolved organic (animal or vegetable substance) right through their thin cell membrane. How remarkable that these are animals, like ourselves. They too eat, digest, excrete, "breathe" (at least take in oxygen), get rid of carbon dioxide, reproduce themselves, apparently go where they want to, and go away from what they don't like. They are active sometimes, and sometimes they are not—they rest. And then, finally, they die. But most of them evade this disagreeable necessity by just quietly splitting in two. Away go the two halves, as good as ever! Of course, some do die,

and go to pieces, or are swallowed up by some larger creature or die from other causes which we cannot discuss now. But however this all is, they are the product of one Lord, Creator and Sustainer of the Eternal Whole. (Those who read Thomson's "The Seasons" will recognize the language.)

Some time ago the writer devoted his time, thought, microscope, money, even some sleep (!) in a study of what appears to be the minutest of these basic-life forms, the one-sided darter (*Pleuromenas jaculans*—you should know the weighty name that the poor little beastie has to carry around). A group of these is shown in Fig. 1, No. 2. About one-fortieth the diameter of a human head-hair would be their average size. Some are a bit larger (but not much) and some are smaller. The writer has measured a good many that were only about one-fiftieth the diameter of a hair! But note: all these have their important, yes, vital niche in the grand structure of life! We cannot dwell on other forms shown in the Figures. But of these is the Kingdom of Water Life! Fishing, *reflective* fishing, is much more than casting a bait into the water and hauling out a seven-pounder for supper! How I wish that you, dear Reader, could look through my microscope at the stomach-content of some of our common eastern fishes, from great to small! There is no end to the study that even a few drops afford!

We need no "excuse" to go fishing! If we need one, we can read what an excellent writer said in these pages, in his inspiring article in the May issue, under the title, "Of Worms and Fishermen." Good old Prosonby put an excuse for, or rather justification of, fishing thus:—

Since, of our globe, three-fourths is water,
It is as plain as day, we oughter
Spend, of our time, three-fourths in fishing
And in land-labor, but a quarter.

CARRYING MINNOWS

To those fishermen who rely a great deal on live minnows for their fishing success, the following tip may prove of help.

Little known to many anglers is the secret of transporting minnows in airtight containers. Any container with a tight-fitting lid will serve the purpose for periods up to 24 hours. A milk can with a snug-fitting closure makes an excellent container for large numbers of bait fish. One- or two-gallon, large-mouthed glass jars are ideal for carrying smaller numbers.

Fill the container with fresh water, drop in the minnows and then screw the lid on tightly. Keep the container in a cool location until the minnows are used. After opening the container for bait, refill with fresh water and again cap tightly.

By following these simple rules, the bait will usually remain lively for 16 to 24 hours.

—Virginia Wildlife

JONAH

In an effort to determine the result of an experimental planting of trout, numbered metal jaw tags are frequently attached to the fish. It is often difficult, for one reason or another, to pry these tags loose from fishermen who creel tagged trout. Here is an instance where the fisherman did cooperate but he had to pry the tag loose from another fish.

Nelson Pyne of Golversville recently reported his catch of six tagged rainbow trout taken this summer from Gilman Lake, Hamilton County. He also sent in a seventh tag, recovered from the stomach of a 25½-inch lake trout caught in June, 1958. Mr. Payne reports that the tagged rainbow trout was partially digested but it appeared to be approximately 11 inches in length.

Department biologists hope that the middle man's profit is not too great on these rainbows. Certainly they are growing well—they averaged 7.9 inches in length when stocked in April, 1958.

—N. Y. State Conservationist



CONSERVATION ACROSS THE NATION

Leisure Stricken

Dr. Boris Pregel, retiring president of the New York Academy of Sciences, according to the *New York Times*, predicted that the 20-hour week to be soon brought about by automation and an abundance of cheap nuclear energy would create a class of "leisure stricken" individuals to replace the poverty stricken. He said that resources of entertainment will be "grievously insufficient" to accommodate the needs of a growing number of leisure stricken and that the government should act at once to deal with the ensuing problem.

The Sport Fishing Institute observed that the doctor's pronouncement sounds like the best of reasons why more attention should be paid to the problems of providing abundant healthful outdoor recreation, especially to increased financing of fish and wildlife research. Already sport fishing is the most popular form of outdoor recreation, with hunting, swimming, boating, etc., right behind.

—*Sport Fishing Institute "Bulletin"*

Farm Pond Management

A bulletin entitled *Farm Pond Management* is available from the Agricultural Extension Service of Ohio State University (Columbus), has been written by extension wildlife specialist R. K. Davis. It should be helpful to pond owners in particular, and informative and interesting to anglers generally. Write the University for Extension Bulletin 374.

—*Sport Fishing Institute "Bulletin"*

Anti-Pollution Nippon Style

A total of 478 industrial plants and mines in Japan are in dispute with fishermen and farmers over the discharge of polluted water or poisonous wastes into the sea and rivers of the Land of the Rising Sun. Of the total 91 are paper plants, 56 chemical plants, 26 spinning factories, 14 fiber factories, 8 oil plants, 13 metal refineries, 25 leather factories, 66 coal mines, 52 metal plants, and 125 flour mills, food factories and breweries.

—*Japan Times*

Lake Renovation

Many states have renovated many thousands of acres of fishing water by removing unsuitable fish populations with fish toxicants and re-stocking with desirable species combinations. It is an especially well tested procedure for producing trout fishing in lakes. It is also being employed increasingly to improve warm water fishing.

Wisconsin is the latest state to summarize its work along these lines. First effort there was on Weber Lake in 1942. Now, more than 1½ decades later introduced minnows, probably angler's bait, are beginning to offer competition to the trout and it's likely that the job will have to be done again. To date, 71 lakes in Wisconsin with a total area of 6,237 acres have been improved for fishing by this method.

Big Catch

An item in *The Net* for February 13, published by the Ohio Commercial Fishermen's Association, makes an important point. It states that a creel census taken by the Ohio Division of Wildlife from June 26 to December 3, 1958, showed that anglers took approximately 1,300,000 pounds of yellow perch in Lake Erie. According to *The Net*, this equals and, in some instances exceeds, the entire commercial catch of that species in some of the years past.

Bars Down in New Hampshire

In support of its recommendation to remove restrictions on smallmouth and largemouth bass, the New Hampshire Fish and Game Department cited the following reasons:

- (1) July and August are the poorest fishing months.
- (2) Present harvest of bass is only about 10 per cent.
- (3) Removal of closed season would probably boost it to about 30 per cent.
- (4) It takes the spawn of very few bass to provide ample natural replenishment.
- (5) Survival and production of bass is dependent solely upon environmental factors and the abundance of other fishes rather than the number of spawning bass present.
- (6) It is not necessary to protect broodstocks with length limits.
- (7) Average annual mortality consumes about 50 per cent of each age group.
- (8) By 1958, a total of 30 states permitted year-round bass fishing in most waters, and 34 states applied no minimum length restriction.

Federal Aid Belt-Tightening Is Due

Administrators of state wildlife agencies are anticipating a belt-tightening with relation to projects financed through federal aid programs, especially in Pittman-Robertson funds.

Beginning July 1, 1959, states are expected to get a 4 per cent cutback in Pittman-Robertson and Dingell-Johnson apportionments due to Alaska's new statehood status.

Hawaii's statehood will not affect the other states. Hawaii has been receiving the minimum state apportionments for two years now and will not "rate" any increase under provisions of the two Acts.

All of the apportionments, of course, will fluctuate with the income received from federal excise taxes upon the sale of sporting arms and ammunition (P-R) and sport fishing equipment (D-J). The P-R trend has been downward.

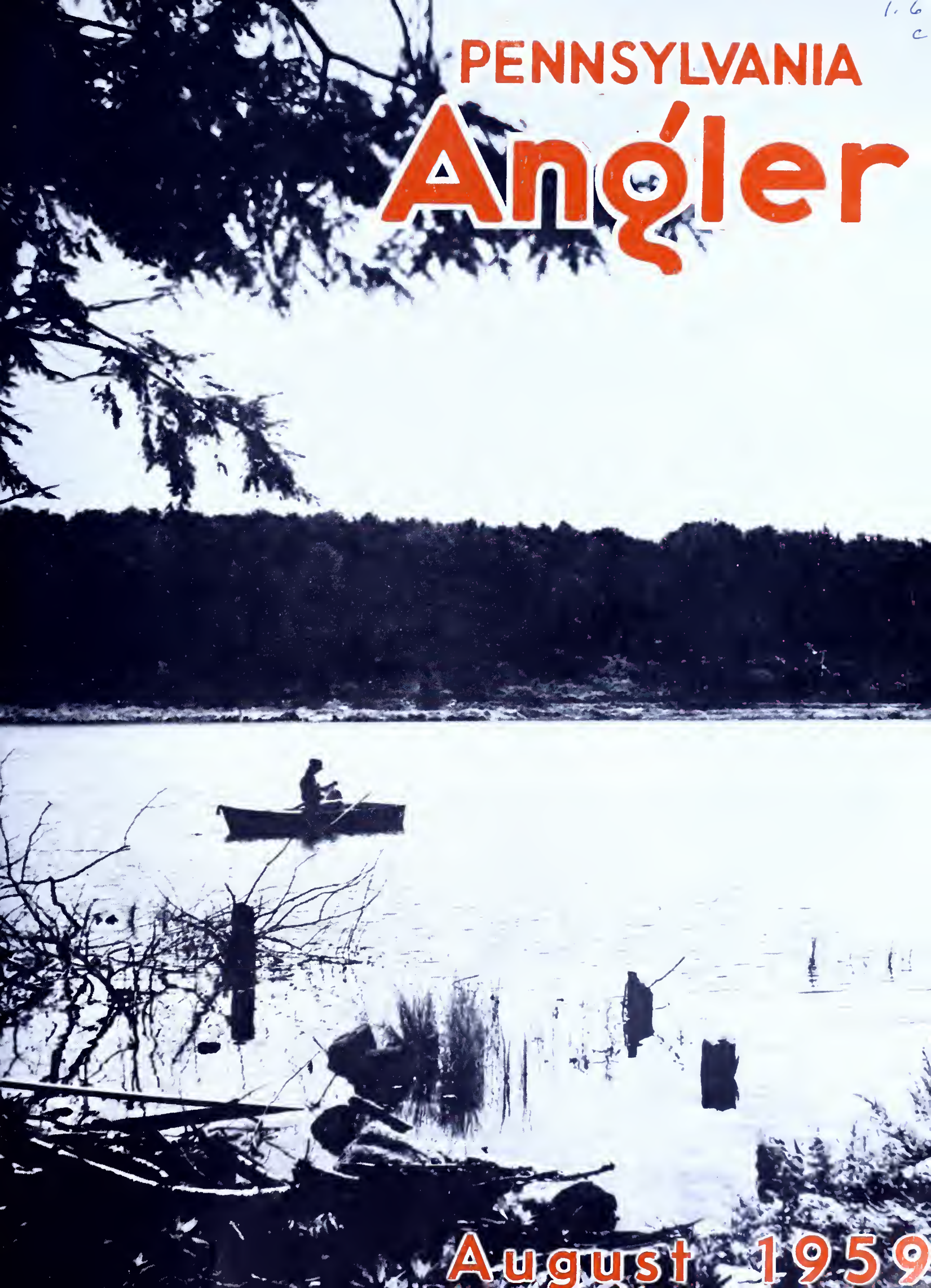
In 21 years, states have received \$164,708,238.95 in Pittman-Robertson funds. In eight years, states have received \$33,306,663.71 in Dingell-Johnson monies.

—*National Wildlife Federation "Conservation News"*



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PENNSYLVANIA

Angler



August 1959

Enter Mr. Strewball

The scene is peaceful. The stream is clear and sparkling. The forest casts shadows over a clean campground.

Enter and leave Mr. Strewball.

The scene is peaceful. But the stream is no longer clear and sparkling—the campground is no longer clean. Mr. Strewball has left his trademark—a sample of his handiwork. In the stream are beer cans. Watermelon rinds, egg shells, paper and broken bottles litter the campground. In short, things are a mess.

Mr. Strewball is representative of many persons who are users of the out-of-doors. Call them all litterbugs if you like, but recognize that here is a real problem. With Strewballs on the loose we have what you might call outdoor “wreck-reation.”

Mr. Strewball is careless, thoughtless and inconsiderate. He violates the laws of our state, but he is unafraid. He knows that unless he gets caught he has nothing to fear. Tossing debris out of a car when no one is looking comes easy to the inconsiderate.

Small wonder then that Mr. Strewball multiplied by thousands can bring havoc upon the land by littering the landscape, ruining the scenery and forcing landowners to close their lands to all.

Small wonder, too, that thousands of dollars of your tax money is spent each year to clean up debris along the state's highways. The U. S. Forest Service also spends many thousands of dollars per year—50 per cent above what's actually necessary—in cleaning up the campgrounds in national forests. Remember that this is all money that could be spent to provide better highways, more game and fish and more campgrounds.

One point to ponder is the value of a truly great resource—scenery. Tourists spend millions of dollars each year and one reason is because of scenery. Scenery provides something more for the hunter and fisherman than just meat in the bag or fish in the creel.

How can we rid ourselves of Mr. Strewball and his like? We won't, completely, but a couple of things come to mind. Maybe a realization by all citizens that Mr. Strewball is costing them money in the form of taxes and game and fish license money will help. At least the Strewballs won't be popular fellows in the outdoors. And the litterbug laws will be more enforceable. We'll bet that some wider publicity on the conviction of Strewballs would help.

Perhaps the answer lies with our youth, with the boys and girls going to school. Perhaps they can be educated to do what it seems impossible to teach their parents. It would be a matter of making outdoor vandalism a moral crime. This, of course, is a part of conservation education—something we need more of in schools.

We really wonder, though, if the answer doesn't lie in Mr. Strewball himself. If *he* really thinks things over, can *he* afford to act like he does?

Charles Hjelte, in Colorado Outdoors

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FRONT COVER—"There's got to be one in there."

Photo by Johnny Nicklas

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A Dream Comes True

By BILL WALSH

One of those "hot" sessions of the Podunk Select Liars' and Fishermen's Club was permeating with smoke the twice-a-month get-together in the back room of Slim White's Beverage Parlor. Slim, as chairman of the farmer relations committee, had just made this glum-faced announcement:

"Boys, we are losing ourselves four miles of top trout water this year because the landowners in the South Fork Valley are going to post their property solid!"

While this dire information soaked in, the assemblage uttered up a variety of rumblings and grumblings, remarks one to the other, an occasional cuss word, a shifting of cigars, pipes and cigarets from one side of the mouth to the other—and the lone tobacco-chewing member spat a contemptuous stream of amber across the room, completely missing the

who'd been sitting in a far corner with ears open and mouth shut—allowing the vocal vapor to liberate itself—hulked his six feet plus to the front of the room. At sixty, the Judge was still a lithe, spring-steel figure of a man. Though it was snow-white, he had most of his hair and it contrasted distinctively with a complexion that seemed as tanned in March as in August.

"Boys," he admonished sternly, "your remarks here tonight sound a lot like you fellers don't like the American way."

There was more shifting of smokes and exchanges of glances—and the tobacco chawer swallowed his chew in the silence.

"Slim," the Judge addressed the tavern owner, "you've got a sign in your place that says you reserve the right to refuse service to anyone not behavin' in proper fashion—or anyone under age. And you don't have to ask every tramp that comes along in the neighborhood to share your living room. In fact, if you found one there, you'd doubtless kick him out."

"Yer durned tootin' I would," bellered Slim. "That's my private property!"

"Then don't ever forget," the Judge shook a solemn finger, "that the four miles of creek in the South Fork Valley are also someone's private property. And they look on it with just as much favor and pride of ownership as you regard your living room—or your backyard."

Mort McClintock scratched his head—getting the Judge's point but not wanting to give in too easy. He piped up:

"Yeh, but we don't have a trout stream runnin' through our backyard. One of the big reasons America is different from them other countries is we got free fishing. These farmers is puttin' an end to an American tradition when they post their ground."

"That's true," said the Judge, "and if we can get them to change their minds that is one of the best arguments we've got. But we can't ignore the fact that the right of private property is also a gretty grand American tradition."

The gavel rapped sharply and Chief Liar and Honorary President Tad Wharton, who'd been remarkably quiet up to now, tried to settle the issue so the meeting could get on to the next order of business—a counter full of apple pie and ice cream and a jugful of steaming coffee, just delivered from the bake shop 'round the corner.

"Boys," he looked at the pies instead of the members, "How would it be if I appoint Judge Willoughby as chairman of a special committee to find a way out of this predicament?"



spittoon. The miss seemed to make the effort more satisfying.

Old Mort McClintock pushed his glasses up on his forehead, took a firm stand on both feet and fairly shouted:

"It's about time we all worked for a law that will make all the streams in this state open to the fishermen who buy fishing licenses and pay for the fish. I hereby make a motion—etc., etc., etc."

For the next half-hour or so this issue got itself kicked around, passed around, fumbled around, and dribbled around until a dozen or so voices clamored for "the question." It was obvious that they planned to get a motion asking for such a law on *their* books—at least.

But before this could happen, Judge Willoughby,

"Smells good," said Mort. He was eyeing the coffee steam coming out of the top of the jug and meant to say, "Sounds good."

"Can I work alone on this?" the Judge asked.

"Shore thing," Tad drawled.

The vote was quick, the motion to adjourn followed as rapidly, and the pie hit the spot. As Tad watched Old Mort shovel in the ice cream, he remarked, "Y'know, it ain't ice cream when Mort gets ahold of it—it's vanishing cream!" Everyone howled but Mort. His mouth was too full.

Apparently the ice cream wasn't all that was vanishing for the Podunk Select Liars' and Fishermen's Club. Four miles of South Fork were apparently also doing the disappearing act. The Judge had a big job on his hands because there was little doubt that the "something" he had been asked to do about it was to get that stretch of water back on the open list. And unless this was done soon, the state wouldn't stock trout in it in time for the rapidly approaching trout season. Of course South Fork had "native" trout of its own—but the annual replenishment made the local boys feel better.

What hurt the Judge most was that in the four-mile stretch lay the Blue Rock Pool—from which he'd taken the 28-inch brown two years ago and where, even at this very minute, lay another of identical size that had come to take its place and for which the Judge had unsuccessfully campaigned last summer. Fact is, the campaign for the trout almost lost him his campaign for the judgeship. He'd worked harder at the one than the other and had won by only 36 votes—the exact number of members in the Podunk Select Liars' and Fishermen's Club.

No one knew better than the Judge the value of the right of private property in our American system of government. Like most good Americans he realized that legal recognition and strong protection of the right to own private property is one of the cornerstones of an economy that wants the best out of life. And he knew that arguing against this fundamental right would never get the four miles of trout water (and other miles of similar water across the country) back on the open list.

The Judge had difficulty getting to sleep that night, what with the pie, the ice cream, the coffee—and the visions of "No Fishing" signs that swirled through his brain. When he dozed off, his rest was disturbed by a recurrent dream in which young Tom Fenwick—10-year-old son of Old Tom Fenwick—snaked a leg-long trout out of the Blue Rock Pool with a nightcrawler and a stiff bait-casting rod. Old Tom Fenwick owned most of the four-mile stretch to be posted. He was the most inflexible of the three landowners involved. If he took his signs down, they'd all follow suit.

Next morning the Judge hardly looked up from his desk when the town's two fire engines streaked out of town with sirens caterwauling like a tangle of tomcats.

There'd been a rash of spring grassfires.

But that evening as he unfolded the Podunk Gazette he read with deep concern that Old Tom Fenwick's chicken house had burned down. And to top it off, some editor had headlined the story "Roast Chicken on the House." Old Tom wasn't much for humor when things were going his way—let alone right after he'd lost a valuable piece of property.

"Better postpone my visit out there," the Judge thought to himself. "He'd probably throw me off. Guess we'd better forget about the Blue Rock Pool this year."

Reading farther in the story, the Judge discovered that an itinerant imbibor seen in the neighborhood was thought to have started the fire after sneaking into the chicken house either to pilfer a set of drumsticks or to get a night's sleep.

Sighing, the Judge turned from the front page and



ALMOST LOST him his campaign for the Judgeship.

read the comics. This nightly ritual accomplished, he turned to the second page. Suddenly he let out a whoop that roused the old setter dog at his feet.

"That's it! That's it!" He dashed to the phone.

"That you, Slim?" he asked when he got his answer. "Listen, I've just figured out how to open up that four miles of stream. . . . Yes, I know about the fire. . . . That's what makes it all possible. . . . Come right on over and I'll tell you about it."

He returned to the chair, skipping a bit on the way, and lit a cigar. He picked up the paper and re-read the story that had sparked all this action and optimism. It told how some folks in a distant community had "raised a barn" for an unfortunate farmer who'd lost his in a fire.

"By George," he gurgled out loud, "We'll raise a chicken house. And if Old Tom Fenwick doesn't reciprocate by opening up the stream—I'll put a match to it myself."

* * *

The Podunk Select Liars' and Fishermen's Club had its work cut out for the next few days. The members

borrowed lumber, begged lumber, scrounged lumber—and even bought some out of their lean treasury. They commandeered trucks, kidnapped a contracting superintendent off his job, got plans for the latest in chicken house construction from the agricultural agent—and worked! This last was the hardest part—but four miles of prime trout water put incentive into them they never knew they had.

Four days later a new and magnificent chicken house stood on the spot where charred timbers had smoldered. And a grateful Tom Fenwick stood with his hat in his hand and the closest thing to real tears in his eyes anyone had ever remembered seeing.

“How can we ever thank you generous men?” asked Mrs. Fenwick, a pale sliver of a woman. Young Tom stood beside her, tugging at her dress, not knowing whether to grin or cry.

“Yes,” Old Tom spoke up, “You’ve all done a wonderful thing for us. We’ll be forever in your debt.”

“Think nothing of it,” the Judge drawled. “It’ll be a sorry day when we Americans can’t volunteer to share the blessings of life.”

He started to saunter away, to the dismay of the PSLFC boys who had gathered around to hear the Judge put in his bid for the removal of the “No Fishing” signs Fenwick had plastered on every post and tree within sight of the roadway and the creek.

“Oh, yes,” the Judge turned, as if in afterthought. “The boys and I were wonderin’—speaking of sharin’ the good things in life—what you might want to do about those signs that’ll close the South Fork to some of the best trout fishin’ around here?”

Fenwick stiffened, “Why I’m goin’ to leave them up, of course, to keep some durn fool from burnin’ down THIS chicken house.”

At first only stunned silence emanated from the PSLFC gathering, then a slow murmur, barely audible at first, grew into a veritable uproar. Fenwick took a step back and the PSLFC boys took a step forward. The Judge stepped between, held up a hand for silence, and said:

“Boys,” his voice was calm. “Tom has a perfect right to keep the signs up to protect his property. That’s the American way. Let’s go back to town.”

Voicing a flood of protests, the PSLFC boys nevertheless returned to Podunk and to Slim White’s back room for a conference.

“We oughta burn the durned thing down,” stormed Mort.

“I’ll buy the kerosene,” roared Slim.

“I’ll strike the match,” scowled Tad Wharton.

And on into the night - - -

* * *

Of course, none of the upstanding citizens of Podunk did any such thing. But there was obvious disappointment in the Judge.

Trout season opened and everyone went fishing in streams other than the South Fork. They had fun and caught some fish—but it wasn’t the same, knowing that some of the favored water was gone, apparently forever. And to top things off, the first day’s post-mortem session in Slim’s place was abruptly interrupted when Tad Wharton rushed in with these words:

“Gentlemen,” the use of this word so loosely quieted the place in a second, “I don’t know how to tell you this—BUT late this afternoon I saw Judge Willoughby and Tom Fenwick coming up through the field from South Fork—and the Judge was carrying his fly rod like he’d been fishing.”

“I don’t believe it,” said Slim.

“Boys,” Tad raised his right hand, “it’s as true as I’m standing.”

“You mean to imply that the Judge has talked Old Tom into lettin’ him have the stream all to hisself?” Slim asked.

“Looks like it.” Tad folded his arms across his chest.

“And after we gave him that \$100 fly rod last year—as a token of appreciation for his many years of working for Podunk sportsmen,” sighed Slim. “That’s the dirtiest trick I’ve heard of yet.”

“He’s bound to land that big trout, I guess—hook or by crook,” Tad said.

Next day on the street, Judge Willoughby was mystified when old friends passed by without speaking. Only Mort McClintock, the Judge’s closest friend and fishing companion, met him for lunch. But he didn’t broach the subject of South Fork, feeling that if the Judge wanted to tell him he’d do it in his own time. And the Judge said nothing about the others’ hostility, thinking, perhaps, it was his imagination.

* * *

A week later at the regular meeting of the Podunk Select Liars’ and Fishermen’s Club, the talk stemmed around the miraculous and mysterious disappearance of the “No Fishing” signs around Tom Fenwick’s place. One day they were there—big as life. Next day they were all down.

Someone said Judge Willoughby had been seen driving out of the yard the day before the signs disappeared but the Judge wasn’t at the meeting and couldn’t be asked.

The Judge was, however, on South Fork the next morning. In fact, the night before he was observed in the Podunk Hardware and Sports Center buying a shiny new fiberglass rod, some flies, a reel, line—the whole works. This raised a lot of brows.

“Whaddaya suppose happened to the Judge’s \$100 fly rod—and all those flies he tied up last winter?” was the gist of the remarks. But no one had an answer.

The Judge and Mort McClintock neared the Blue Rock Pool at about 10 o’clock—having fished upstream from a handy bridge. As they rounded a bend that

opened on the pool immediately downstream from Blue Rock they came upon a strange sight.

Old Tom Fenwick sat on the bank of the stream—a roaring fire at his back and a thermos of hot coffee at his side. Propped on a forked stick was a magnificent fly rod of fine split bamboo. You could tell from 30 yards away this rod was the real thing—Tonkin cane, burnished gold in color. From the end of the leader a dry fly dangled uselessly in the current.

“Isn’t that your - - - ?” Mort started to say, but the Judge motioned him into silence.

“How’re you doing?” he addressed Old Tom.

“Haven’t caught a thing all morning,” Tom declared, laughing. “But it’s a fine morning to be out. Somebody should have told me about this fishing business long time ago!”

“Maybe you’d better try a different fly,” the Judge suggested.

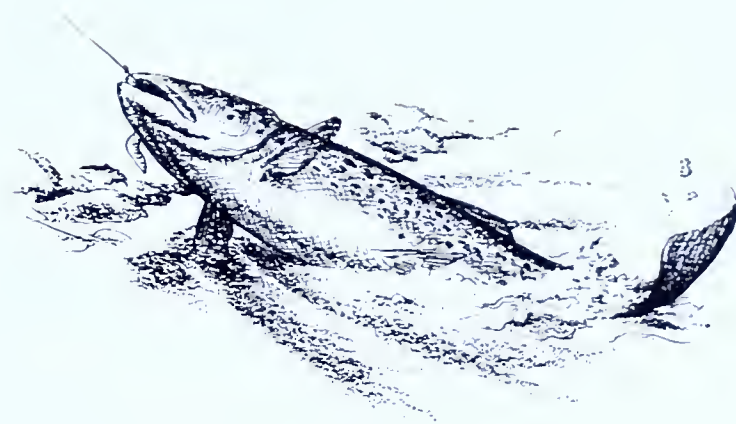
“Good idea,” Tom guffawed. He reached into his overall pocket and brought out a fly book, expensively bound in alligator leather, and fairly bloated with flies.

“Isn’t that your - - - - ?” Mort started to say, but again the Judge indicated with a look that this wasn’t the time.

“Where’s young Tom?” asked the Judge.

“Oh, he’s fishin’ that big hole down by the Blue Rock,” Tom said. “Fool kid. I told him not to waste his time down there but he wouldn’t listen. You know how kids are these days. You can tell by lookin’ at that place that there’s nothin’ in it.”

“Well, good luck to you,” the Judge tipped his hat and went on. “We’ll go down and see how he’s doing. By the way—thanks for taking down the signs.”



BEACHING a leg-long brown trout.

“And good luck to you, too,” said Tom, affable as a kitten full of cream. “Thanks again for the fishin’ pole and the bait.” Mort winced—and the Judge probably did, too, though not noticeably.

As they rounded the bend to the Blue Rock Pool, they came upon a picture more amazing than the last—young Tom beaching a leg-long brown trout by running backwards up the bank with a stiff bait-casting rod held firmly in both hands. A nightcrawler wriggled at the corner of the big fish’s jaw as it slid up over the stones.

Mort ran up to help the youngster, shaking with excitement, unhook the fish and keep it from getting back in the water.

The Judge, in no such hurry, cast a sorrowful glance heavenward. He seemed years older as he said:

“O Lord! I’ve been praying for weeks to ask you to show me the way to make my dreams about South Fork come true—and I don’t want to appear ungrateful now that it’s done. But did You have to do such a thorough job?”

Sit Down and Fish

There’s one in every crowd.

He braces himself with both feet widespread, winds up like a sand lot hurler, and says, “lay down, I’m going to cast.”

Even worse, is the sidewinder who isn’t polite enough to warn you.

Sit down and fish. This is the advice of the Mercury outboard people, and they back it up with a few comments on the subject.

First of all, sitting in a boat is safer. Modern broad beamed craft aren’t as tippy as canoes, and the boat you are using could be perfectly safe to stand in. But sitting is still proper boating procedure, and it’s a good habit to learn.

Because casting from a sitting position is more difficult, it’s considered one way to tell the difference

between an experienced angler and a neophyte. It requires correct wrist action, and the more accurate overhand cast. Sit down and cast, and you’ll learn to handle your equipment better.

In addition to boating safety and correct casting techniques, a posterior on a boat cushion can literally mean more fish on the stringer. Fish spook easily, and they can see a man standing in a boat more readily than they can a sitting fisherman.

In observing the world from their watery habitat, fish are restricted to a view between 90 and approximately 37 degrees. As a rule, a standing fisherman falls within this field of vision, and appears as a dancing, distorted monster. On the other hand, a low silhouette boat can approach within several yards of fish without spooking them.

So . . . sit down and fish.



A Rare Outing

It is just a bit over an hour via the North-South Turnpike from the Mount St. Joseph Academy and the Chestnut Hill College near Philadelphia to a fishing area (above) near Lehighton in Carbon County. But it was another world to 30 Sisters of those two institutions and a world they enjoyed immensely several weeks ago as the guests of the fee fishing enterprise there. And they did all right in an activity all too few of their calling are privileged to enjoy all too seldom, as is displayed beyond a doubt on all counts by Sister Marie Theresa (right), music instructor at the Academy. She didn't catch all the trout posing with her, but they were just a portion of the group's total catch.



More Fishing, Too!....

Via P. L. 566

By **CHARLES SLATON**

Assistant State Soil Conservationist for Pennsylvania

Chances are that you never saw flood water enter your home, or witnessed factory slowdowns because of a water shortage; or farmlands inundated and crops destroyed. But if you had, then you would know why Pennsylvanians are working together in a new approach to an old problem—soil and water management.

The unifying force is Public Law 566, recently enacted by the U. S. Congress, commonly known as the Watershed Protection and Flood Prevention Act. Farm and non-farm families will benefit under this new program which deals with the use of the soil and water, woodland and wildlife in their watersheds.

The recurrence of damaging floods, water shortages and soil erosion problems in the State's small watersheds has caused Pennsylvanians to act. Working together, factory owners, farmers, townspeople and local governments have joined with their Soil Conservation Districts in encouraging watershed management programs.

Already local groups in more than thirty-five small watersheds covering two million acres have taken steps to initiate watershed protection projects. The Soil Conservation Service is working with local people in planning six projects; three of these are scheduled for operation this year.

Up on the tributaries of the Lackawaxen River in Wayne County, town and country people recall hurricane Diane's devastating visit in 1955. They also remember the many "small Dianas" that sent the tributaries out of their banks, spilling infertile soil over the bottomland farms. Highways and bridges appeared to be prime targets of the runaway water. And industries in the watersheds rarely escaped damages.

The people up on the tributaries of the Lackawaxen River heard about the opportunities under P. L. 566 and the more they learned about the 566 program, it became apparent to them that here was an opportunity for solving some of their problems on the tributaries of the Lackawaxen. The Wayne County Soil Conservation District Directors and the Wayne County Board of County Commissioners made application for assistance under P. L. 566. With the help of the Soil Conservation Service, they developed a work plan for reaching their watershed needs. Seven small flood prevention dams to store flood water and modern conservation practices on the farmland are the backbone of their plan.

The hopes of bringing the tributaries under control are now nearing reality. Several years of discussion and planning are paying off. Land treatment measures on the farmlands are nearly completed. Three flood prevention dams are scheduled for installation this year, four are to follow in 1960.

Costs for construction and land treatment measures will be more than offset by reduction in flood damages throughout the watersheds. As in all P. L. 566 watershed projects, the government pays the construction



SMALL EARTH dams in the headwater streams will store flood water during periods of heavy rains and snow melt. U. S. Department of Agriculture surveys show that more than 76 per cent of the nation's annual flood damages occur in the small streams and tributaries of the major rivers. The outlet at the base of the overflow structure, left of center above, marks the level at which the conservation pool will be kept. *USDA photo.*

costs of flood prevention work. The local people are responsible for obtaining land easements and rights-of-way, carrying out contracting for construction, and for operating and maintaining the completed flood prevention structures.

Down on the Brandywine in Chester County water presents another problem. A few inches of rain in the



THERE'S ADDED hope for increasing more water storage for fishing, wildlife, recreation and municipal and industrial water supplies under P. L. 566. The Pennsylvania Fish Commission has under study dam sites in several watershed projects which can be used both for flood prevention and fish production. USDA photo.

rolling farm country can turn this picturesque stream into a powerhouse of destruction. And a summer's drought will expose its rocky bed as it trickles past towns and factories in need of water. Many of the old "fishing holes" are gone too. They're filled with topsoil intended for crop production on the hill farms. And much of the soil removed by the waters of the Brandywine ends up in the harbor at Wilmington where dredging costs are already high.

The call for watershed management has been up for some years now by conservationists. They've been trying to hold the Brandywine within its banks and keep it flowing year-round. Hold the raindrop and the snowflakes where they fall has been their plea, and they have partly succeeded.

The added water storage for fish and wildlife habitats, now a feature of P. L. 566 as it is being implemented, deserves an elaboration which author Charles Slaton delegated to the staff of the Pennsylvania Fish Commission.

Upon the full understanding of the new law, the Commission saw in it the potential for extending its provisions to serve an added purpose: recreation—fishing, in particular.

Questions were asked of agencies that could be involved in such extension. Could these small watershed dams be enlarged to create permanent pools of reasonable size, meanwhile retain their desired flood control function? If so, to what extent could or would the United States Department of Agriculture participate in the added costs? Would any costs that befell the Fish Commission, in the event it could participate in the enlarged projects, qualify for Dingell-Johnson funds, created by the federal excise tax on fishing tackle?

The answers came and they were favorable. As the questions were raised in Pennsylvania, the answers came here first. By virtue of those circumstances, the Commonwealth has been projected to the forefront on another front moving toward increasing and improving fishing opportunity for its citizens.

Briefly, the costs of the addition to the dam structure and of acquiring the needed additional land will be shared equally by the U. S. D. A. and the local people. "Local people" could include the sponsors of the initial project and the Fish Commission, or the Fish Commission alone, if such would become necessary. Further, the Fish Commission's share of these added costs are eligible for D-J funds, in the amount of 75 per cent of these costs. In total, it all means that a fishing facility would be created at a cost to the fishermen of only 12½ per cent of the total cost of the project.

It is to be noted that P. L. 566 does not allow the U. S. D. A. to participate in paying the costs of such features as access roads, parking, sanitary and boat launching facilities. These would fall entirely upon the "local people." However, they too in the event "local people" becomes the Fish Commission are eligible for D-J moneys.

The maintenance of the resulting dams and environs and the management of the fishery would become the responsibility of the Fish Commission.

To date, the Pennsylvania Fish Commission has looked into every project in the Commonwealth instituted under the provisions of P. L. 566 and will continue to do so. And wherever in the opinion of its engineering department an enlargement to the initially proposed small watershed flood control dam is physically and economically feasible, it will offer to become a partner in expanding the project or, to the extent that funds become available, undertake the expansion alone.

C. R. Glover

The landscape of the Brandywine Valley has changed. Modern farm conservation work is evident throughout the watershed. The conservation ledger of the Chester County Soil Conservation District shows farmer interest in conservation runs high. Through the local soil conservation district, federal, state and local agencies are assisting farmers in planning and applying conservation programs. Additional stimulus comes from the Brandywine Valley Association which has alerted the area with the need for watershed conservation.

The Watershed Protection and Flood Prevention Act appeared to be tailor-made for the Brandywine. It offers added hope to the local people for reaching their goals. They see the Act as a means for taming the stream and providing more water for industry, recreation and the Valley's growing population.

With the help of the Soil Conservation Service a work plan for flood prevention and watershed protec-

tion was made for the 211 thousand-acre watershed. The project which is sponsored by the Chester County Soil Conservation District, the Chester County Commissioners, the Delaware County Commissioners and the Delaware State Soil Conservation Commission, calls for ten flood prevention dams and extensive conservation work on the farmlands.

Four of the dams are planned for multi-purpose uses. In addition to flood prevention, two may be constructed to provide water for municipal and industrial uses; two dams are planned to have added water storage for fish and wildlife habitats (see box). The Pennsylvania Fish Commission and the Department of Forests and Waters and the Soil Conservation Service are jointly planning the multi-purpose structures. Long range plans also call for the building of a reservoir by the Department of Forests and Waters to meet future water needs of the area.

In western Pennsylvania—hard by the Ohio Line—they're planning to control some of the tributaries at the Allegheny River. Plagued by seemingly annual floods, watershed communities welcomed P. L. 566. They have grown tired of watching the Sandy Creeks, Wolfe Creeks, Mill Runs and other streams close factories and send residents scurrying for high ground. And there's always the detours caused by road damages and bridge washouts.

This year's floods appeared to be even worse. Ice floes added to the destruction. In Mercer County, Township supervisors, Borough and County Commissioners have joined with their Soil Conservation District in sponsoring watershed protection and flood prevention projects. Almost one-half of the county is under application for assistance.

And so it goes—from Mill Run in Crawford County



MODERN CONSERVATION work on the farmlands and small dams are the backbone of the Watershed Protection and Flood Prevention Act. Land and water management is largely in the hands of the farmers. Proper management begins as farmers change to conservation farming. *USDA photo.*

to the Wissahickon in Montgomery County—from the Cowanesque River fast by the New York line to Greenc County next to West Virginia—the call is out for flood prevention and watershed protection. Farmers and townspeople in the small watershed of the State, where estimates show that a high percentage of the annual flood damages occur, are working together to solve an old problem—land and water use.

ANGLER'S QUIZ

By Carsten Ahrens

Rules and Regulations

1. No rod should have a line equipped with more than 1, 2, 3, 4, 5, 6 hooks.
2. Carp (May—May Not) be killed with long bow and arrows.
3. Any boy under 16 may fish in Pennsylvania without a license.
4. Sunday fishing is (Lawful—Unlawful) in Pennsylvania.
5. Members of the armed forces need no license to fish in our state.
6. Veterans of the armed forces need no license to fish in our state.
7. You may have as many terrapins in your possession as you wish.
8. You had better not kill or capture a sturgeon if it is less than four feet long.
9. You may use a spear to capture carp and suckers.
10. You may do anything you wish with the food or game fish you catch, for instance, make fertilizer.

Answers on Page 18

Pennsylvanian on OWAA Board

Another honor was bestowed upon Eldy E. Johnston, outdoors scribe of McKeesport, Pa., and numbered among the authors whose works are contained in the PENNSYLVANIA ANGLER, when the Outdoor



Mr. Johnston

Writers Association of America elected him to a three-year term on its Board of Governors during the recent annual convention of the association in Hot Springs, Ark.

Other OWAA officers, all of whom are among the "Who's Who" of conservation and outdoor writing in

America are: Joe Mears, Pasadena, Calif., president; E. W. Means, Oak Ridge, Tenn., first vice president; Ed Keenan, Burlington, Vt., second vice president; Claude Gresham, Natchitoches, La., third vice president; Seth L. Myers, Sharon, Pa., secretary; and E. Budd Marter, III, treasurer and executive director. Others selected for three-year terms on the Board of Directors were: Don Cullimore, Jacksonville, Fla.; Ray Heady, Kansas City, Mo.; Bob Steber, Nashville, Tenn.; Russell Tinsley, Austin, Texas; Ed Spanke, Chicago, Ill.; and Art Carhart, Denver, Colo.

Eldy began his writing career as a columnist with the *Daily News* in McKeesport in 1953. Since that time he extended his coverage of outdoor sports, and in 1955 was made outdoor editor of that enterprising Allegheny County daily newspaper, which position he still holds.

He is an Eagle scout, scoutmaster and scout ex-

aminer for fishing, nature and wildlife merit badges. He is rated "expert" by the National Rifle Association, and is presently a pistol and hunter-safety instructor.

He is a breeder of pedigreed beagles and has won many ribbons and trophies in field trial competition.

In addition to his present newspaper stint, he does an illustrated outdoor page for a monthly labor publication having a 1,500,000 national circulation.

An enthusiastic angler and nimrod in his own right, having fished and hunted from coast to coast and from Quebec to Costa Rica, Eldy Johnston has been the recipient of numerous honors and awards during the comparative few years of his rapid rise to national recognition.

Among his citations have been those bestowed by the OWAA, Johnson Motors, Pennsylvania Outdoor Writers Association, National Wildlife Federation, Pennsylvania Federation of Sportsmen's Clubs and the Distinguished Service Award from the National Rifle Association for training pre-inductees in firearms marksmanship.

Eldy Johnston was born in McKeesport on January 5, 1913. He attended high school there, Pitt University Engineering School and the Penn State Extension School in metallurgy. He and his wife, Gertrude, are the parents of two fine daughters, LaVerne, 15, and Karol, 11 years old.

The PENNSYLVANIA ANGLER is proud to extend this signal salute of confidence and congratulations to a native son.

Catfish Prefer Mud

If a man could pick exactly the right time to go cat-fishing, he'd say, "Give me a rising river and plenty of mud."

For some reason, known only to the cats themselves, catfish go on a feeding binge whenever rains upstream swell the rivers and cloud the waters with a curtain of mud. Take advantage of this phenomenon, says the Mercury outboard company, and take home a mess of the sweetest-tasting fish ever to grace a platter.

Catfish apparently sense the abundance of food washed into the river during periods of rising waters. They hurry to gorge themselves before these extra rations disappear. And, during the process, they gobble anything that appears edible . . . plus a few other delicacies that would be difficult for anything but

a catfish to digest.

Muddy waters encourage cats to leave their deep hidden dens and invade the shoals. This means that most anywhere you set out a line you'll find fish. As the currents speed up strikes are swift and sure, you'll find bait stolen less often.

If waters reach a near-flood stage, all aquatic life moves into protected spots such as small tributaries. These areas become packed with crayfish, insects, minnows and various other forms of food. And game fish naturally follow.

So look for the telltale signs that forecast good cat-fishing . . . rising, muddy waters. You'll be well rewarded.

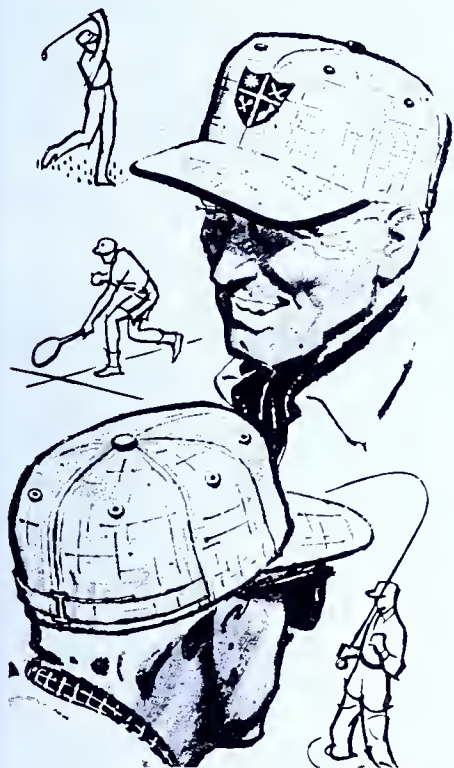


NEW THINGS in TACKLE and GEAR

Intended as a service to ANGLER readers wherein new items of fishing tackle and outdoors gear that come to the attention of the editor are introduced, with no intention of endorsement.

Address all inquiries to the respective manufacturers.

Hugger Sport Cap



Touch and close to adjust this new sport cap to fit perfectly comfortable to any head size. Adjust to all sizes from 5% to 7%.

Sharp, smart appearance . . . no buckles . . . no snaps . . . no ugly tucks or gaping hole in back. "Velcro Closure is invisible" . . . holds securely . . . can't slip or loosen. Makes this the most wanted, most comfortable cap for all sporting and outdoor activities. Colors: red, white, tan, brown, grey, navy, sky-blue, yellow and kelly green.—**Hugger Caps, 853 Merchandise Mart, Chicago 10, Ill.**

Plastic Creel



A new American-made one-piece molded polyethylene creel. Completely mold and odorproof. Natural cane tan color with 12" rule on cover. Length 14", depth 9", weight 1¼ lbs.—**Horrocks-Ibbotson Co., Utica 2, N. Y.**

Top Kicks



New Top-Kick lures molded of Tenite butyrate plastic give lots of action in surface fishing. Designed with a free-spinning head, the lures spring into lifelike movement with the slightest pull. They are said to be particularly effective when fished slowly near weed beds, lily pads, sunken logs, or other such likely spots.

Top-Kicks are available in two sizes and in six different colors. Won't rust or corrode.—**Miller Lures Co., P. O. Box 8011, Kansas City 29, Mo.**

Sportsman's Belt Buckle



The belt buckle that also opens cans and bottles, and serves as an emergency screwdriver. It has been developed for the outdoor man to provide everything that can possibly be demanded of such a device.

Made of high carbon steel, the buckle is chrome nickel plated, rust proof and is available in gold or silver.—**Afi Patent Products, Inc., 215 West Maple Street, Milwaukee 4, Wis.**

Res-Q-Pak



Military Type Res-Q-Pak is similar in operation to the self-inflating life preserver worn and trusted by hundreds of thousands of sailors during World War II. It is inflated by means of a cylinder containing a highly compressed, non-toxic gas.

Thousands are used by pilots, fishermen, duck hunters, boatmen, skin divers and swimmers throughout the world. Keep Res-Q-Pak clipped to you whenever you go on, in, over or near water. Supports a fully clothed, 250 lb. man for hours.—**The Muter Company, 1255 South Michigan, Chicago 5, Ill.**

Jig Head Floating Crawler



The hook on which the worm is strung is molded in a ¾-ounce "ball" jig-head that sinks the rig quickly to the bottom. Fashioned of a special plastic with air cells, the 5½" crawler "floats" underwater and, extending upward at an angle, the play of current adds extra lifelike wiggling action. The lure is practically weedless, since the hook rides up when retrieving. Being a jig-type rig, the familiar jig-fishing technique is usually most effective.—**Weber Tackle Company, Stevens Point, Wis.**

AERIAL "TOPO" photo from 8,000 feet of the Dutch Fork Lake site spanning approximately 1½ miles. The solid black line is the boundary of the Commission owned tract. The white line depicts the shoreline of the Lake that is now there. The broken line between points 2 and 3 marks the new road to the parking lot at point 2. The dam breast and spillway is at point 1.

DUTCH

FORK

LAKE

makes it six

By C. ROBERT GLOVER

Chief, Conservation Education Division

It was on a sultry day in mid-August, 1954, that Budd Brooks, fish warden of the Washington-Greene Counties district, stood well up on a sharp rise along the Dutch Fork Creek, about midway between Claysville and West Alexander in Donegal Township, Washington County. He peered intently at a similar rise on the other side of the stream, then scanned up the valley with a calculating eye. Several reflective nods indicated a confirmation of what he had seen earlier in his mind's eye. Here was a possible lake site—a locale, the type of which the Fish Commission then as now were seeking.

His "find" was reported to Harrisburg that night.

On July 12, 1959, the following letter, postmarked Claysville, was received by Budd Brooks, now sta-

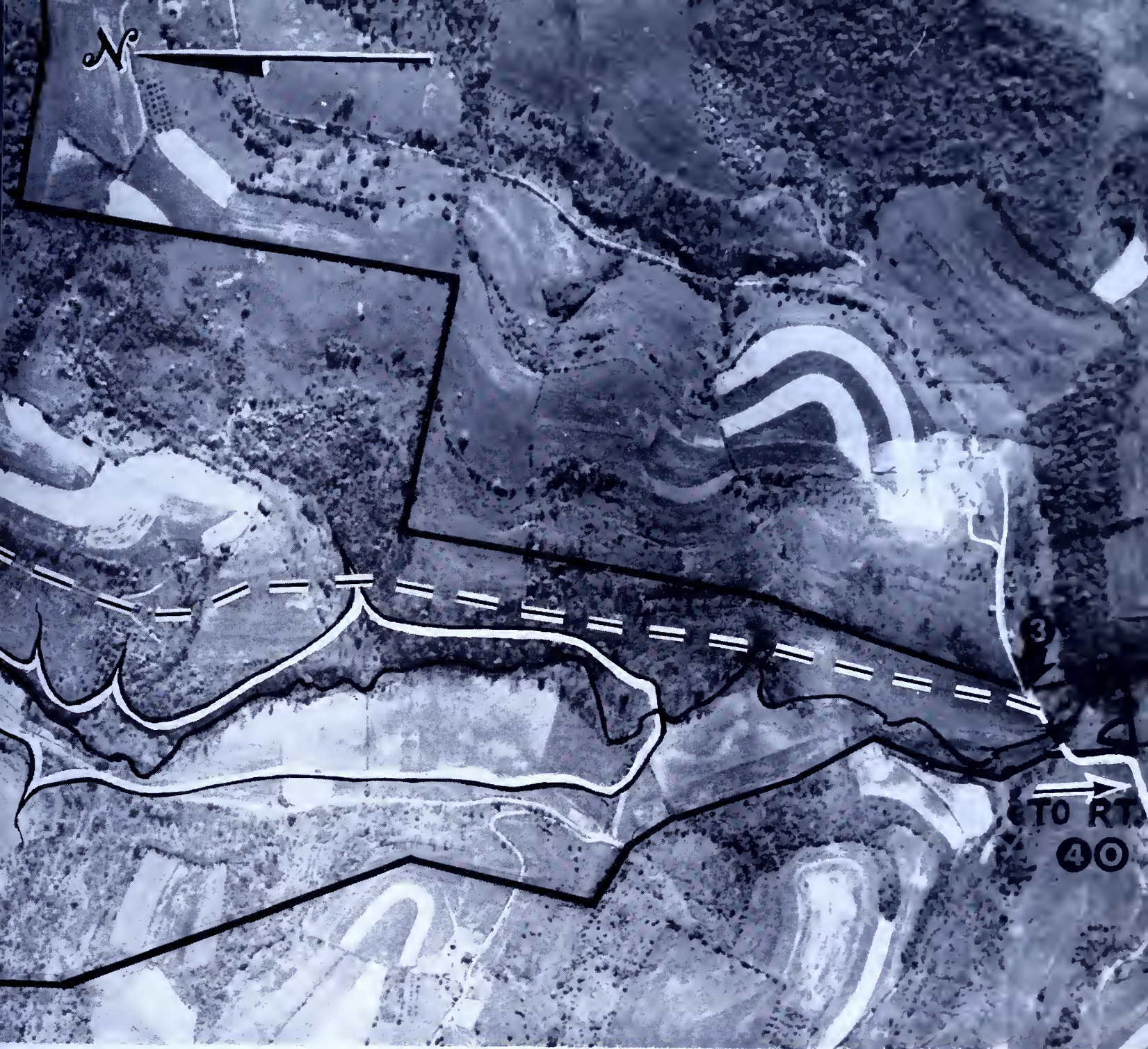


tioned at the Commission's Benner Spring Fish Research Station near Bellefonte, where he dispatches and records the fish stocking program:

"The people of the surrounding community want to thank you for your tireless efforts in obtaining for us the Dutch Fork Lake. We were in hopes we could thank you personally at the Dedication, but since you were unable to make it, we are using this letter to express our thanks."

And following were five pages of signatures. As Neal Barnhart of Wolfdale put it in a note to Executive Director William Voigt, Jr., "this was not a letter circulated just to obtain signatures, but a list of friends and people who really appreciate his efforts."

Between those two occasions, on each of which the former warden was alone on the stage, the cast of the Dutch Fork Lake saga was a large one and the plot



a suspenseful one.

The first hurdle, that of its feasibility engineering-wise, was cleared within a matter of weeks. The proposed dam site afforded the needed foundation for the breast and the basin area would hold water.

The second hurdle was passed in like fashion when Commission biologists determined that the water supply measured up both in quantity and quality.

In October, 1954, the long and involved procedure of land acquisition got underway. It was in March, 1957, that the title to the last needed plot of land was conveyed to the Commonwealth. In all, 588 acres were acquired at a cost of \$46,466.

Meanwhile, engineering plans were drawn.

On May 13, 1957, groundbreaking ceremonies marked the beginning of construction. In November,

1958, the stop logs were put into place in the control tower and the impoundment of water began.

The next date of note was June 14, 1959—Dedication day and the date on which the new lake was opened to public fishing.

The physical statistics of Dutch Fork Lake are as follows:

It lies $\frac{1}{4}$ mile north of U. S. Route 40, approximately 3 miles west of Claysville on Dutch Fork Creek. The latter is a tributary of the Buffalo Creek which in turn flows into the Ohio River in West Virginia.

The surface area of the lake is approximately 91 acres. At normal pool level some 280 million gallons of water are impounded. It presents a shoreline of approximately 4 miles, two-thirds of which is bordered by woods. The average width of the lake is 356 feet.



It is approximately $1\frac{1}{4}$ miles long. Average depth—13 feet, maximum depth at the dam breast—24 feet. The dam breast is 460 feet long and 34 feet at its highest point from ground surface. In addition to the land acquisition costs, the dam breast construction and site development cost \$230,000. The latter includes a parking lot that will accommodate upward to 300 cars and

JUST BEFORE the dedication ceremonies. In the background to the right is the Dutch Fork Lake and dam breast. *Washington (Pa.) Observer photo.*

almost a mile-long access road to that lot from the township road off U. S. Route 40.

PICTURED BELOW are those who played leading roles in the Dutch Fork Lake dedication ceremonies. (Left to right) Bert Euliano, district fish warden; Thomas F. O'Hara, chief engineer; Fish Commissioners R. Stanley Smith and Joseph M. Critchfield; William Voigt, Jr., executive director of the Commission; Commissioner John W. Grenoble; Dr. W. A. Prideaux of Claysville, William Harrison of California, Ben Stone of Finleyville, Neal Barnhart of Wolfdale, and H. O. Campsey of Claysville. The latter are officials of the sportsmen's organizations in Washington County. *Washington (Pa.) Observer photo.*

Like the five lakes built by the Commission before it, Dutch Fork Lake will be managed as a warm water facility. Toward that end its waters were stocked as follows: December 3, 1958—1,700 brown bullheads, 8 to 10 inches; December 18—1,375 largemouth bass, 6 to 8½ inches; December 22—5,700 largemouth bass, 3 to 4 inches; April 14, 1959—3,300 largemouth bass, 3 to 4 inches; May 6—500 white crappies, 10 to 12 inches; May 7—10,000 muskellunge fry, May 13—300,000 walleye fry, May 18—100 walleye, 16 to 18 inches; June 14 (Dedication day)—300 brown bullheads, 10 to 14 inches, and 300 channel catfish, 10 to 13 inches, and 160 largemouth bass, 11 to 16 inches.



Thus Dutch Fork Lake becomes the sixth such fishing facility to be created by the Pennsylvania Fish Commission in its lake building program that was inaugurated in 1951. Previously constructed were Virgin Run Lake in 1951 (30 acres) in Fayette County; Duman Dam in 1952 (20 acres) in Cambria County; Glade Run Lake in 1954 (60 acres) in Butler County; Lake Somerset in 1956 (253 acres) in Somerset County; and Lower Woods Pond in 1958 (80 acres) in Wayne County.

Presently under construction is the enlargement of Belmont Lake in Wayne County. The latter was formerly a 135 acre hatchery lake which serves as a water supply reservoir for the Commission's hatchery at Pleasant Mount. When completed Belmont Lake will present approximately 172 more acres of public fishing water.

Scheduled to get underway this year will be Commission lake number 8 on Possum Creek in Cumberland County.

THE OLD LOGGER

By **L. E. STOTZ**

U. S. Forest Ranger

He stopped at the Ranger Station, one Saturday afternoon, to ask for a cup of coffee. He was an old logger from Montana, Idaho and the Douglas fir region of the Pacific Northwest.

"I ain't seen any timber yet in Pennsylvania," he complained. "They's nothin' but brush on them hills."

"You came through fifty years too late," I said. "This country has been clear cut, but it's coming back. Give it another 30 to 40 years of growth, and fire protection, and we'll have some fine timber."

I offered him a chair in the kitchen, and put the coffee water on to boil. He sat down stiffly, and pulled a sack of tobacco from his shirt pocket. Fishing out a crumpled cigarette paper, he held it between two fingers. His hand shook, and some of the dry tobacco spilled on the linoleum as he rolled a smoke.

"Hope your missus don't mind tobacco on the floor," he muttered apologetically.

"It's all right," I said. "It just matches the linoleum. Maybe she won't notice it right away."

I poured him a steaming cup of coffee, added cream and sugar and then settled back in my chair to listen to the old logger.

He took me to the green aisles of a Douglas Fir forest that was ripe for the saw.

"I pulled one end of the longest cross cut saw in the Fir country. We stood on springboards higher'n your head and I nearly dragged my partner through the tree," he bragged. "All we did was fall 'em. Another crew did the buckin'. If you didn't watch out, though,

the fallin' crew next to you'd cut in on you and get the big ones in your strip."

Then he took me back to familiar country in Montana—to the Ponderosa pine and the Western larch country. Back to the South Fork of the Flathead River. To the Blackfoot Indian Reservation, and to the Little Big Horn where Custer and the 7th Cavalry were annihilated by Chief Crazy Horse of the Sioux.

We talked of the high country in the Northern Rockies—of snow-capped peaks. We fought a few of the old forest fires over again. Then I noticed that he hadn't touched his coffee yet.

"You better drink your coffee before it gets cold," I suggested.

He bristled up like an old porcupine. "You're jest tryin' to get rid of me," he complained. But he emptied his cup.

As he walked out the door he turned on me. There was a twinkle in his eye. "People out west always have a cup of coffee to offer a traveler. I didn't need a cup of coffee now. I jest wanted to see if a stranger could get a cup for the askin' in the East," he said.

The last I saw of this fiercely independent old man was his erect figure walking up the road towards Kane. I thought of the trees that he had felled to make homes for a growing America. Now, he was an old man walking with his back to the setting sun, and peering wistfully at the homes of wood that he passed. The logger who had helped to build America would never have a home of wood for himself.

"HOWDY," the Good Outdoor Manners Raccoon, Says

Good Fishing? Depends upon you
and your outdoor behavior!



Taking Trout from "Waste" Water

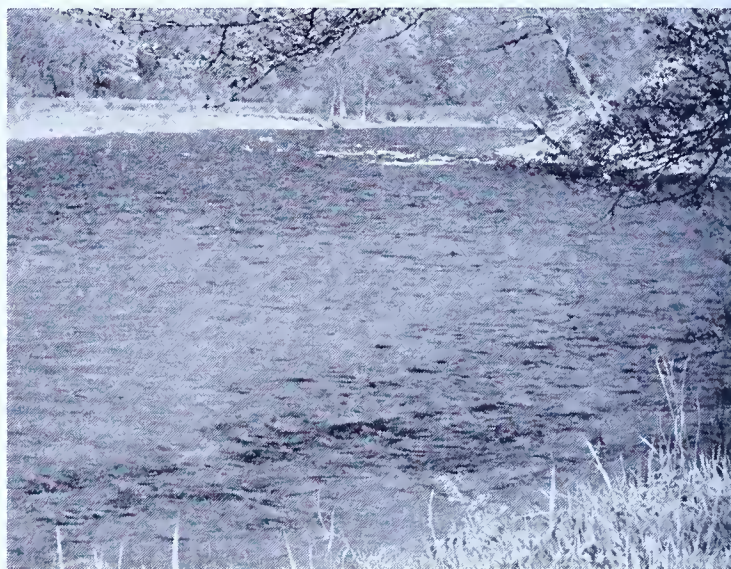
By
RAY OVINGTON

... it's harder work, harder wading, but fishing it right puts trout in the creel

How often, while driving by the stream in your car have you seen the anglers clustered about the heads of pools while the faster and so called "waste" water is completely devoid of fishermen? How often have you, as an angler, regardless of the gear being used be it spinning or fly rod, passed up this area of the stream for the more potent looking holes?

I've got news for you. There are fish there and they can be caught if you know the secret. They can be caught a lot easier than those that are lying in the "safety" of the pool where lures and lines of all descriptions are passing over and through them all day long by the casting-happy fraternity!

For once in your life, don't go with the crowd . . . play it solo and enjoy the delights therein. This is the water where the average spin-fisherman cannot east without becoming instantly snagged. Few dry fly men enjoy this water because they cannot see their fly sit quietly in the reflections. The lazy angler will not trespass for fear of breaking an ankle. But, gentlemen, this water of which I speak contains trout and big ones too! There are a lot of holes in that so called barren water, and trout find this type of hideout excellent in the warmer part of the season when the pool water is too clear and when they like to be bathed in as much floating oxygen as is possible to enjoy. Their food



FISHING THE waste water below the pools. This is where many good ones lie despite the fact that it looks shallow. A close examination will find many holes, nooks and crannies where the fish lie in wait for food coming down to them.

comes down to them, almost into their mouths. All you have to do is to present it to them in this same way and they'll respond.

There is a stretch of this type of water on my favorite trout stream. An old fellow lives along it. Many is the time I have seen him return from the "front porch," as he calls it, with a mess of trout for dinner. "Virgin water, simply because no one knows there's fish in it," he said to me one evening as I eyed a particularly succulent creel full of browns. The old man taught me how to fish that water and since those days I have often harked back to the advice, taken off to fishermanless waters and have been rewarded.

First thing you must realize is that this broken water that looks so shallow from a distance contains nooks and crannies big enough for lunker trout. It hardly seems right that such fish should hole up in such confining locations, but anyone who knows the trout also knows that he is that sort of a fish, particularly the brook trout. In our crowded streams many of the hatchery feds take up residence in these places particularly after they have been caught and have drifted downstream while trying to regain their strength. Some of them reside in the barrens simply because they don't want to be bothered!



A CREELFUL of trout like this can be taken from the waste water simply because the trout are there. It is veritable virgin water fishing.

Just what do I mean by "waste water?" All water which is moving fast over loose gravel shallows, and similarly that water which cannot be classed as broken by large rocks or boulders, not held up or diverted by shelving or bars, and certainly not the rapids type of water between large obstructions and boulders, nor pooled up sections of the stream. Generally it is a part of the stream where the current is not centralized, but rather is spread out into a fan of fairly even distribution. Here and there in this water will be found holes that are partly invisible unless you are almost upon them. The depth of the water may be, on the average stream section, say fifty feet wide, about 18 inches deep at the most, but usually not more than six inches. No large rocks protrude from the surface. This is the kind of water that is the first to go in the dry season, as the stream flow diminishes. At this time of the year the holes that hitherto were unseen become evident.

During the high water season the migrant trout find refuge here, as the food comes down to them from the pools above, especially that food that has been set free from the bottom by wading anglers. In the dry season, the live nymphs and minnows gradually become condensed in the main area and here again the trout have a steady supply of food as well as adequate hiding place where sufficient oxygen is bubbling over them.

Fly fishing for them can also be done easily in a downstream direction, and on the wider streams by the across and downstream cast that is let drift to and from these little holding spots behind rocks. The old style of three flies on the leader is perfect medicine here, a dark fly, a medium fly and a light fly on the tippet so that you can watch the progress of the rig through the water. There is no necessity for long casts. Simply roll out the cast if you like in all directions from you, covering the holes as you go, make a few steps downstream and begin again. Long line fishing is difficult to control, especially with three flies, for the whole secret here lies in your ability to work the hotspots thoroughly, making sure that you work from near to far so that the line does not cross over the fishing area. There is no reason why you can't turn around occasionally and fish your wet flies upstream and let them drift into the holes naturally like dry flies. A simple trick here is to dope them so they will float! Flies that have hatched during the night generally drift downstream the first thing in the morning after the sunrise wind has blown them from the rocks and streamside bushes and trees. The drifted wet fly is particularly effective in this open water at that time. Dry flies are not nearly so effective on small stream open water as they are on the larger streams. The best dry fly fishing I have ever had other than specific hatching times in pools has occurred on this barren water of larger streams. It seems that because the whole scale of the stream is bigger, the hot spots in the open are larger in proportion to the size of the trout and therefore more trout are found in a given



ANOTHER EXAMPLE of waste water is the white stuff in the center of the picture. The water near the camera is where most of the fishermen would operate.

stretch. Here again is spot casting to the area just above the particular little hole or run behind an obstruction. Let the fly dance over the spot, one or two times, holding the rod high so as not to let the line ruin the area. Cast often allowing the fly only a short run where it can be controlled. Here again, when a short line is used it is possible to break the rules and tie on two dry flies and let them dance for the attention of some brazen trout.

This is rushing water you are fishing, requiring that you watch your step in wading lest you turn an ankle or roll your footing on a moving rock. Proceed carefully and slowly, for there is lots of water to work over. Feel your way over the pesky bottom with your feet and don't shift your weight on one foot until you know it is secure. On the larger streams keep an eye out for deep holes that can go unnoticed. It is possible in such places to go over your boot tops! Knowing by experience that these holes are that big, you now are more convinced that each one of them should hold a hungry trout!

The strike of a trout from such water is very decisive, for he has little chance to eye the lure before grabbing for it. They are very accurate critters, hitting the mark every time they really want to. The strike will be seen sometimes before the hit is felt, particularly if you are wearing polaroid glasses. The battle with the fish is a tough one as you try to follow his course over the rocks, any one of which is sharp enough to file your leader or hang you up.

Landing this trout also takes a bit of advance thinking. If you play the fish until almost dead, his soft mouth will develop a hole large enough for the hook to be thrown. If you horse the fish too hard, he'll either tear loose or break the leader on a rock. Get



BUCKTAILS OF large size can be seen easily and act as good fish finders in waste water.

below him brother and but fast, remembering all the cautions about secure footing all the way. Drift him down to you and while he is still thrashing a bit, drop the net underwater as fast as you can and lead him into it.

Open water angling for trout is a sporting proposition all the way and one which will pay off handsomely once you get the hang of it. At first you'll search out this water after having been skunked perhaps in the more de luxe runs and pools. You'll go there so that you can take home at least a brace of trout for the day's efforts. Then comes the time when you like this fishing far better than the conventional and you'll have a private stream all to yourself wherever you go. It will remain so just as long as you don't tell the boys where you caught the fish! Even if you tell 'em they probably won't believe you anyway, so your sanctuary is still safe!

Here again is reason enough for short casts and short lines. A trout that has the edge on you because of your lack of line control has you ten to one before you can even start. Play him gently but firmly, remembering that in this water he is lively and frantic, much more so than in the aquarium-like deep pools. Any fish that lives a long while in fast water develops extraordinary speed and power just to keep himself alive.

This One "Caps" Them All!

The National Wildlife Federation is indebted to South Dakota State Game Warden Melvin Brunken for this interesting and unusual fishing story. A party of anglers were fishing for bullheads in a borrow pit near Lake Traverse when a cap was blown off the head of a ten-year-old boy. The cap was blown into the water and, as it floated around, the boy's father attempted a retrieve by casting a wobbling spoon. He missed the cap on three successive tries—but caught three northern pike ranging from two to six pounds.

Missouri Fish Wear Mystery Bands

Commercial fishermen in Missouri have a mystery, the National Wildlife Federation is advised. The commercial anglers have caught several sturgeon which were wearing red rubber bands around their heads. The banded sturgeon have been caught in many different areas of the Missouri River. The bands, in most instances caught behind gills of the fish, apparently were placed there by an unknown person for an unknown reason.

Answers to QUIZ

1. (3)
2. May
3. Resident needs license at age of 16;
Non-resident needs license at age of 12
4. Lawful, if permitted by landowner
5. False
6. False, unless disabled
7. Just five
8. True
9. False, except in Delaware River and Lake Erie
10. False

Here's a Simple Quiz to Test Boat Knowledge

Your knowledge of your boat, the rules and regulations governing its use, and the common sense dicta that make boating a pleasure, determine whether you are a boatman who will be welcomed on the nation's waterways or a boatman who will be looked upon as a menace. Here's a simple true-false quiz.

If you're a real expert, you should be able to answer all 20 questions correctly without trouble, and you'll probably think the quiz is elemental. To rate as a good boatman you should answer at least 17 correctly, and if you are below that mark you had better consult with your nearest Coast Guard Auxiliary or Power Squadron instructor, or get some advice from someone else well versed in boating regulations.

1. A boat approaching you on an angle off your right bow has the right-of-way and you are burdened with using caution as you cross courses. T. F.

2. If you can make a boat go 15 miles an hour with a 7½ horsepower motor, you can lift the speed to 30 miles an hour by using a 15 horsepower motor. T. F.

3. You are legally liable for the damage caused by the wake of your boat. T. F.

4. A combination bow light showing red on the right and green on the left is required for night running on all 16-foot outboards. T. F.

5. Conical shaped nun buoys, painted black and carrying odd numbers, mark the right-hand boundary of a channel when entering from seaward. T. F.

6. A boat transom is a ventilating device for the cabin. T. F.

7. Boats coming out of slips into open water, or leaving berths at piers or wharves, have the right-of-way over all other boats. T. F.

8. You are legally required to carry a boat horn or whistle if you own a 20-foot outboard cruiser. T. F.

9. A pier is a structure built out into the water to be used as a landing place, and a dock is the space between piers for reception of boats. T. F.

10. When fueling, the hose nozzle should be grounded against the side of the tank to prevent discharge of static electricity. T. F.

11. The number of seats in a boat indicates its capacity. T. F.



12. In anchoring, the ratio of line to depth of water should be at least six-to-one. T. F.

13. This picture shows that the proper way to lower an anchor from a small boat is to heave it as far from the boat as possible. T. F.

14. It is permissible to anchor in a channel if you are fishing from your boat. T. F.

15. If caught in a sudden squall, your best procedure is to head into the wind and waves at low speed. T. F.

16. The proper method of donning a buoyant cushion life preserver is to put both arms through the holding straps so the cushion rests snugly against your back. T. F.

17. It is illegal to tie up to marking buoys. T. F.

18. Outboard boats less than 16 feet in length are not obligated to observe the nautical rules of the road. T. F.

19. To make a landing, it is best to head into the wind or current when approaching a pier. T. F.

20. Buoys marking obstructions or junctions are striped horizontally red and black with the top band marking the best channel. T. F.

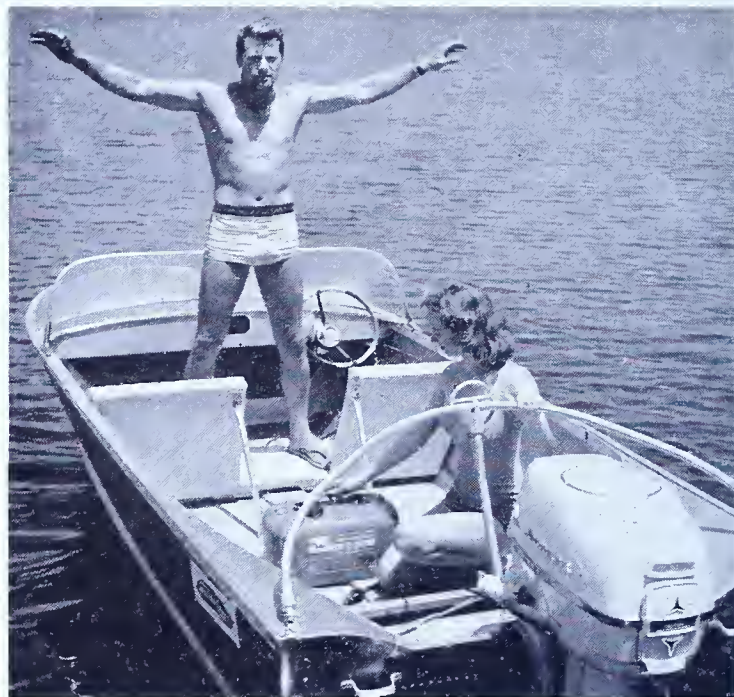
Answers to quiz: 1-T; 2-F; 3-T; 4-T; 5-F; 6-F; 7-F; 8-T; 9-T; 10-T; 11-F; 12-T; 13-F; 14-F; 15-T; 16-F; 17-T; 18-F; 19-T; 20-T.

Thumbs Down Don't Clown!

Proof of the irresistible lure of the waterways is strikingly shown by the fact that, this year, more than thirty-seven million Americans of all ages will take an active part in boating. This fastest-growing family sport holds magic charm for all—from toddlers to teen-agers to grandparents—partly because it is healthful, invigorating and adventurous, but chiefly because it is sheer fun. It adds years to life and zest to living. Best of all, it is one of the safest of all sports.

Occasionally, however, a tiny minority of boaters—usually through thoughtlessness, but sometimes just to “show off”—irritates and annoys other boaters, as well as swimmers and fishermen, by clownish and irresponsible behavior that imperils the safety of others.

Police and safety officials, boat and engine makers, boat and yacht clubs, and the U. S. Coast Guard—all have helped promote safe boating by encouraging use of the “thumbs down” idea. The signal is simple; everyone knows that “thumbs down” is the sign of disapproval—and all that most offenders need as a reminder of the rights and comfort of others.



Need Help? Use This Signal!

HERE'S A GOOD new signal for small boat owners to use to summon help. It consists of standing up in the boat and flapping your arms. The signal is popular in the south and was devised as a signal that could be distinguished quickly as a call for help, not just random waving or shouting.

Notes from the Streams

Whole Hog or None

While patrolling the West Branch of the Clarion River one day, I stopped to watch a group of boys fishing a deep pool. Suddenly two of them who were fishing side by side had bites at the same time, and both set their hooks at about the same time and began to reel in their lines. A rainbow trout about 12 inches long was brought in and it was found that they had both hooked it. The fish had actually swallowed both their hooks. What an argument followed. Finally one of them suggested cutting the fish down the middle and splitting it, but the larger boy of the two didn't like this idea, and said that as he was the bigger of the two, he would take the fish. That's how it wound up, much to the disgust of the smaller boy.

—H. Clair Fleeger, Jr., Warden
Elk County

The Cat Should Be a Deputy

While patrolling Lake Wallenpaupack with Game Protectors Weigelt and Kriefski, and Warden Joseph E. Bartley, I arrested a man for fishing with too many devices. His remarks to his fishing buddy was, “If that black cat hadn't crossed the road in front of us this morning we never would have been caught and arrested.”

—Harland F. Reynolds, Warden
Wayne County

Suggestion for a New Lure

Foreman Jim Biddle of the Spring Creek Hatchery related this humorous incident to me. Seems that while one of the

workers at the hatchery was in the process of taking the water temperature of one of the trout holding ponds, he felt a vicious strike. Much to his surprise he found that he had only the top half of his thermometer left. Could this mean that the temperature of the water is an important element of angling success?

—Paul Antolosky, Warden
Centre County

Leave 'em for the Birds

Recently, while on a stream patrol I noticed a large Osprey flying low while clutching a sucker about 12 inches in length. The low flying perhaps was due to the weight of the large fish. Later that afternoon while talking with several fishermen who said they didn't believe there were any fish in the stream, it happened. An Osprey appeared and plucked a trout of about 10 inches in length from the stream some 30 yards in front of us. This, needless to say, was a fitting climax to our conversation.

—Lee F. Shortess, Warden
Lycoming County

Who Knows?

While patrolling Piney Creek recently, I stepped on a snake. Upon examination I found it to be a copperhead which had an eight-inch brown trout half swallowed. The trout, no doubt, saved me from a dangerous snakebite.

C. B. Baughman, Warden
Blair and Cambria Counties

STOCKING PERMIT REQUIRED

A comparison of the species of fish which authentic records disclose as truly native to Penn's Woods and those which are present today in commonwealth waters would likely produce several surprises for many modern anglers.

In colonial times before any of the citizenry had the time or inclination to mess with the biology of the waters, except to supplement the family larder, a complete listing of what are classed as game fish today would have included brook and lake trout, largemouth bass and eastern chain pickerel in waters suitable to each throughout the state and muskellunge and northern pike in the Lake Erie drainage, with musky further distributed in Ohio River drainage.

Some very welcome additions to certain waters were made during the intervening years. Among them were the smallmouth bass, the walleye, the brown trout and the rainbow trout. But there were other introductions, notably the carp, which have done irreparable harm.

Why did (blank) ever put (blank) species of fish in (blank) lake or stream? Fill in the blanks as you will, and you'll still have no answers. But to hold the list of foreigners and exotics and possible diseases where it is, the Fish Commission in 1957 recommended an amendment to the Fish Code. It asked for the addition of the word "introduction" in section 251. The legislature concurred and the pertinent sentence now reads in part: "... may promulgate such rules and regulations for the angling, catching, introduction or removal of fish in or from any of the inland waters ... as he may deem necessary."

Acting on that newly granted authority, the Commission evolved a new regulation, the portent of which is presented almost entirely in the wording of the following two forms. Aside from announcing that (1) the application for a permit to introduce fish may be obtained from the district fish wardens or the regional or Harrisburg offices of the Commission, and (2) such application must be submitted to the Harrisburg office, and (3) failure to do so and to report subsequently or to proceed without a granted permit will entail a \$20 fine, the forms tell the whole story.

Application for Permit for Introduction of Fish

In order to prevent the possible introduction of fish which are diseased or which might be harmful to native species, the following application for a permit to plant fish not found in a lake or stream is required. Permits are not required for stocking farm ponds or

licensed fee fishing ponds, except with the following kinds of fish: Eels, carp, gold fish, golden orfe or any other species of fish not native to Pennsylvania waters.

The undersigned hereby makes application to introduce _____
(common name) (scientific name)
into _____
(name of water)
located in _____
(county) (township)
and tributary to _____
(name of stream)
the fish will be secured from _____
(name of vendor)

(address of vendor or agency)
the applicant agrees to inform the district fish warden of the proposed date of release and will permit examination of the fish prior to stocking.

(signed) _____
(name)

(address)

Permit for Introduction of Fish

Permit No. _____

Under authority of section 251 of the fish laws as amended, permission is hereby granted to

_____ (name) _____ (address)
to introduce _____
(name of fish or fishes)
into _____
(name of stream or lake)
tributary to _____
(name of drainage)

This permit is valid for a period of sixty (60) days from date.

A report of the number, kind and size of fish stocked and date of stocking must be submitted to this office before the expiration date of this permit.

Date of permit _____
Expiration date _____
Signed: _____



"HOWDY"—the raccoon—says:

Don't be a litterbug!
You CAN take it with you.

The Art of Lonesome Fishing

By **ROBERT R. BOWERS**

Photos by the Author

This is what you asked for, I kept telling myself, as I rolled out my bedroll in readiness for my first night's sleep in the lonely valley. The roar of the river which ran beside my canvas tent played a monotonous but restful tune as I took a last cheek on the camp-



LONELY FISHING allows the individual to move as slow or fast as he wishes to, and there never is any "pushing" from anybody.

fire to make sure it was out. Then, darkness, damp and cool and still, settled down around me and I was alone.

As I lay there in the darkness of my tent, moonlight streaked my bedroll as it seeped in through the flap at my feet. It seemed as the last embers of the campfire died out, the tempo of the crickets, frogs and night birds increased—or perhaps I was just listening better. Whatever the reason, it was a fresh clean sound, rather like the river beside me.

It had been nearly four years since I had last camped beneath the towering, pinnacled rocks above me. But things hadn't changed much. The country store was still operating a mile or so down the stream; the river was still fast and clear and the frogs continued to chirp along the rocky shore. The only thing which had changed was the fact that I was a little older and the last time I had camped with friends—now I had come alone!

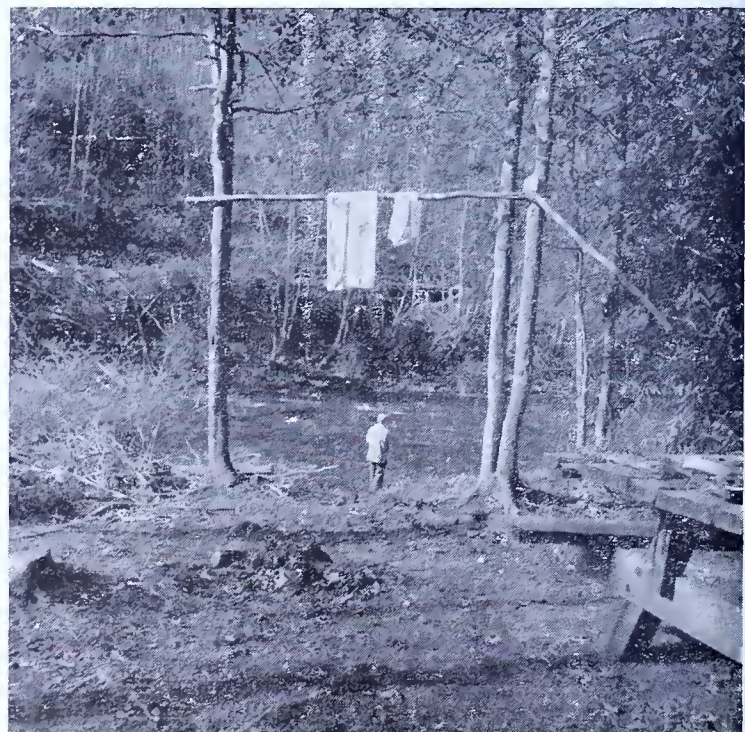
The first night was a long one. Sleep came in spurts. When I awoke with a start the urge to talk to someone was almost overwhelming. About five the next

morning, I crawled from my sleeping bag and stuck my head out of the tent flap into a wet blanket of fog. The air was crisp and clean and it felt good. Stepping outside, the ringlets of fog made the towering, jagged peaks above look much like upset ice-cream cones and the reason the area was often termed "smoky" by the natives was self-evident.

Breakfast was a hasty bacon sandwich, a slightly burned egg, and a black cup of coffee, for the white water called and there was fishing to be done. The urge to talk was less now, and more important things—like gathering bait, cleaning fish and washing pots and pans—kept my mind occupied.

By noon of the second day, The Great Alone had taken its toll. It had put aside such worldly thoughts as theaters, automobiles and fancy houses. No longer did I feel alone. After all, I guess, no man is exactly alone when he is by himself along the river. You can't get lonely if you make friends easily and freely. And, to survive very long in the great outdoors one must meet all its citizens, like the woodchuck that lived just out from my tent. At first he was afraid of me and he ran at my approach. Then he began to get bolder each day as I walked towards him. Finally, after no attempt to touch him was made, he ambled over near my tent in a very curious fashion. I asked how he felt and talked about his "shadow" and asked how the fishing was, but all he did was turn his head and look at me as if I may need a doctor's attention.

SEVENTEEN days all by myself.



I often wonder what he thought, if groundhogs do think, when he came out of his den that afternoon to find me gone.

Every man has a bit of hermit in his soul. He has times in his life when he feels he ought to "get away from it all." But few men have ever given themselves ample opportunity to realize that *loneliness* itself, as so often portrayed in ladies' magazines, is purely a matter of perspective. The truth of the matter is, most people *fret* over the very thought of being off somewhere completely disjunct from friends and other humans. "I'd go crazy," they say, but nothing could be further from the truth.

Seventeen days all by myself alongside a roaring chain of riffles proved that to me. Getting away from people is rather like trying to stop smoking cigarettes: the first day's the worst, the second and third days are a little easier; the fourth and fifth days you begin to tolerate conditions. Thereafter, you become absorbed by being alone. From then on you sometimes wonder why you ever wanted to be around people in the first place.

My trip into the "wilderness" by myself was not aimed at getting away from anything or anybody. Perhaps that was why it took about five days to clear my mind of those worldly necessities, such as juke boxes, automobiles and laughing people. My objective was aimed at getting away from routine—I longed to live among the natural wonders which I had grown up to love, respect and wonder about.

There was always one fact that camping alone brought out to me, and it didn't strike me until a long time after my boylike wanderlust had somewhat subsided. That one point was that when you establish yourself in a lonesome country area, the natives seem to take it upon themselves to look after you. I recall

WHETHER you cook what you catch or live out of cans, the great outdoors really stimulates the appetite.



COOKING is a part of lonely fishing, but you have only yourself to please.

one farmer who rode a mule for three miles one morning to bring me a quart of fresh milk. "Just milked this mornin'," he said proudly, "and figured you might like some."

Perhaps that man and others in that "neck of the woods" thought I was helpless or that I could do no harm by myself, but it seemed they didn't mind at all my being there. Come to think of it, I wonder upon whose property I was camping. In those days, I just didn't ask. I guess such things were kind of understood then, and so long as a man behaved himself he was welcome.

Perhaps my most unforgettable phase of "lonely fishing" is that I was never in a hurry. Friends are great and needed companions, but sometimes one tends to spend too much time worrying whether he is having fun or whether he is ready to go home before you are ready. There is no "pushing" when you are alone, and if you want to rest, or fish or eat crawfish, you're the boss. That's worth a lot to me sometimes. Pretty soon you find yourself noticing new things every time you fish a section of water. You not only see the algae fluttering in the current, but you also notice the tiny fish which shelter there. The rocks become round, rough or oblong when you take the time to observe, rather than being just so many stones in the river. After awhile you have a downright deep feeling for a fishing stream as you get to know its every secret. And that's a big part of lonesome fishing to me.

To say that I was lonely would not be correct. Perhaps the greatest yearning after the first week was for someone to share my moments of wilderness living, not for me to share their more worldly pleasures.

Some people asked me how I stood the lack of gay lights and music, something one becomes accustomed

to in this age of accelerated night life. That, however, is an easy question. To me the prettiest music in the world is the soft monotonous rumble of rushing water, combined with a symphony of tree frogs and crickets chirping. The splash of light from the Milky Way and a million other stars was gay enough for me. And the moonlight dancing off the ripples of gushing water were a constant source of fascination.

Not one morning or evening was spent without at least two or three hours of fishing, and it is surprising in that much fishing how much one can learn about a river, its inhabitants and its temperament. I guess I knew each trout, smallmouth bass and rock bass by its size and location before I left that stream, and some of them probably knew me. Something can be said for living on what one catches himself, as I did

those many days and nights on the river.

The Great Alone took a heavy toll of me. It gripped deeply into my innerself and held me fast. The day I was to leave, the urge to stay was something to be reckoned with. On that day, there was as much question about whether I would go home, as there had been the first day as to whether I would stay where I was.

Fishing is said to be a family sport, and I'll not argue. I love to take the wife and children out now and then and tie on hooks and put worms on hooks all day long. But there are times when you ought to try the art of lonely fishing. One finds it hard to tell another exactly why, but once you've "been there" further explanations won't be necessary. It's something a man has to do to know about.

Who's Superstitious?

By JACK CAWTHON

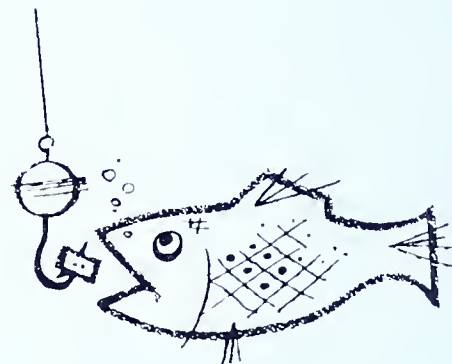
There are probably as many superstitions centered around fishing as there are around planting potatoes or having babies. Anyone who is the least bit superstitious can have a heyday with fishing.

I had an uncle who swore, literally, time and time again, that he didn't believe in superstitions, but when spring came, and with it fishing, he had a ritual which would have made an African tribal chief envious. He'd go out, find a cricket, bring it into the house where he'd put it under an overturned wash tub, and pound the tub with his fist, muttering unintelligible words which would have made a hit rock 'n' roll number today if I had recorded it. There were other parts of the ceremony, but he wouldn't allow anyone to observe these rites.

I never did learn what he did with the cricket. The poor thing wouldn't have been fit to go out into the world again even if he had turned it loose. It would have been deaf from the pounding, if not a mental wreck from the weird ceremonies.

I always felt that my uncle must have baited his hook with the ill-fortuned insect. Whether it was the bait or the magic words, no one knew, but he caught fish. He caught fish where there were never fish before. It was enough to make even the most ardent non-believer ponder a little.

This sort of magical ability seemed to run in the family. I had a cousin who always consulted his horoscope before going fishing, or for that matter, anywhere. It was he who predicted that a flash flood would hit the Grassy Lick Run section in 1947, and



sure enough it did. He was always a sort of hero in the community after that immortal day, because his reasoning had resulted in the farmers moving hogs, chickens, cows and themselves to higher ground.

After the flood predictions he set himself up as an authority on fishing, consulting, of course, horoscopes. He's earning quite a living now for himself making artificial lures which are constructed for each individual's horoscope.

With just a name, address and a horoscope he builds a personal lure. And while it's a well known fact that the fish don't always bite, there are a lot of fishermen who will. At least he's getting rich, and I'm still an editor.

But even editors, like the poorest of people, can enjoy the goodness of fishing. With this balmy spring weather, I'm rarin' to go. If I could just find a dog-goned cricket I'd be out of this office tomorrow!

—W. Virginia Conservation



CONSERVATION ACROSS THE NATION

"... Until the Well Goes Dry"

Water is a commodity we must have regardless of the cost. . . . Down in Dallas, Texas, water is scarce and sells for 50 cents a gallon, or . . . 25 cents for a half-gallon carton. For a few cents more Illinois people can buy the same one-half gallon carton of milk. For 25 cents we can buy 1,000 gallons which at the Texas rate would cost \$500. One thousand gallons of water is 16,000 glasses of water—all for 25 cents. The cost for domestic water in other Illinois communities may be more or less, but no one has to pay 50 cents a gallon for it—yet. The cost of water goes up when it is necessary to clean pollution from the supply, and increases with other costs of production. There need never be, so far as a human can predict, a desperate shortage of water in Illinois if a good conservation plan for water is in operation.

—*Outdoors in Illinois*

Let's Be Consistent

A mental picture is associated with a name. With one name for one thing, identification is simple. That's why fisheries men hope everyone will use the same common names for fish.

Just think of the fix one gets into on the name "walleye," for example. In parts of Canada walleye are called pickerel, but here pickerel is an entirely different species. In another locality walleye are known as pikeperch. Surely no one wants to confuse the walleye with perch. In other places they are referred to as pike, but pike is part of the accepted common name for northern pike.

Let's call a spade a spade, and a walleye a walleye!

—*Wisconsin Conservation Bulletin*

Cure-Alls Versus Prescriptions

It isn't sound to imply that any particular management technique is always wrong. But likewise it is not always right, and formerly we looked upon such things as stocking, predator killing, and restrictive regulations as cure-alls. They were all we knew, so they were all we used. The modern concept is that management programs should be tailored to the specific situation. Each problem must have competent professional study, and the prescription should be written on that basis. We will move forward just as rapidly as sportsmen adopt this attitude and stand up for it.

—Durward L. Allen, Purdue University, in
Outdoor America

End of Violations: When?

There is no great pleasure involved in arresting people, but popular or unpopular, these rules of the game (game and fish laws) must be enforced and the "players" that insist on disobeying them must suffer the penalty.

The entire matter seems to hinge on the public recognition and acceptance of what is involved. When people in general assume the moral attitude that taking game and fish out of season is stealing from their neighbors, when it is not considered clever, funny or a game of chance to see what a hunter or fisherman can get away with, and when the intent and purpose of the game and fish laws are accepted as an actual benefit to each individual citizen, the problem will be well on its way toward solution.

—A. F. C. Greene, former commissioner,
Wyoming Game and Fish Department

Fisherman's Note Book

The fisherman's usual concept of a fish "home" is simply the whole lake or stream. Biologists find, however, the homes for many species of fish are much more localized. The hole, weed bed or bar is probably a sharper definition of "home."

Research at the University of Wisconsin on displaced green sunfish revealed 85-95 per cent of the green sunfish in a small pond returned to the corner from which they had originated. In most cases this was done with the precision of a homing pigeon. Largemouth bass also tend to have a home to which they returned 68-73 per cent of the time.

Anglers should take notice. If you have a strike at a certain location once, better check that fish "home" again.

Ground Water

Underground reservoirs of the United States contain more fresh water than all surface reservoirs and lakes combined, including the Great Lakes.

About one-sixth of all water used comes from underground sources. In many areas ground water is being used faster than it is naturally replenished. In effect, the stored water is being "mined." Water levels in wells are dropping in nearly all sections, and the irrigation projects, municipalities, and industries depending on underground water are threatened.

The Conservation Volunteer
Minnesota



GILBERT THE GUIDE

ON THE STREAMS, LAKES & PONDS
WE SEE MANY ANGLERS - OF ALL
DIFFERENT SHAPES & SIZES -
BUT, WHEN YOU BOIL IT DOWN THERE
ARE REALLY ONLY TWO TYPES...

TYPE-1

SPORTSMAN • CONSERVATIONIST
OBEYS FISH LAWS, RULES &
REGULATIONS • RESPECTS THE
RIGHTS AND PROPERTY OF
OTHERS .



TYPE-2

FISH & GAME HOG • OUTLAW •
LITTERBUG • TRESSPASSER •
HAS NO RESPECT FOR LAW
AND ORDER - "LAWS ARE MADE
TO BE BROKEN."



... AND, IT'S PRETTY HARD TO TELL THE DIFFERENCE
JUST BY LOOKING AT THEM YOU HAVE TO SEE
THEM IN ACTION .

IT WOULD PAY EACH OF US TO ASK THIS QUESTION
FROM TIME TO TIME :

"WHICH TYPE AM I ?"

PENNSYLVANIA
Angler



September 1959

PENNSYLVANIA STATE LAW

Guest Editorial...

The Heretics of Wildlife

It is the sheerest heresy to imply that the Noble Red Man wasn't a major authority on mammals of America and a practicing conservationist. It further is subversive to imply that the pioneers who opened up this continent for neon signs and hamburger joints did not love the wild creatures and forests within their domain. Only an iconoclast would hint that these rugged heroes weren't the finest exemplars of how to handle our natural resources.

But in hot weather, a weak man is likely to have his vision distorted by heat waves and he fails to see clearly the virtues of primitivism; he may even doubt that the game-management principles of Jim Bridger or the ecological magic of Hiawatha will provide a solution to our wildlife problems of the Twentieth Century.

May the Great Manitou forgive such blasphemers who doubt the biological wisdom of Kit Carson and the superior understanding of game technique displayed by Daniel Boone.

Of course it *does* seem a little odd, even to four-square believers, that those Indians who knew all the secrets of the wild, back in the days when this was a hunting and fishing paradise, occasionally starved for lack of prey. And why did the Mountain Men, as paragons of conservation virtue and Americanism, trap their way right out of business in a very few years? Is it just possible that while Dan'l Boone knew something about killing, and that Lo the poor Indian could achieve reasonable slaughter despite inadequate weapons—is it possible that neither Dan'l nor Lo had very much biological savvy? After all, an airplane and an atom bomb can kill a very large number of people without the pilot being a medie or a psychologist.

Yet it does appear sometimes that the people who really appreciate wildlife are civilized people. Literature reaffirms our faith in savage sapience and the madly-destructive "city hunter" has become part of our folklore. But those of the Heretic Few just can't seem to believe in this wholeheartedly.

These rebels insist that there's a good bit of evidence, though with no emotional backing, that the Children of Nature are more likely to kill anything that moves than to spend time studying its habits. This is particularly true, they claim, if the moving animal happens to be unknown to the gunbearer.

Some hidden doubters are so far gone that they can't find joy in the bare-foot lad who, using twine and a bent pin, catches monster bass while the "city" angler with his bamboo fly rod and artful Coachmen raises only a pair of scrawny fishes. They don't believe it even when we show proof on the cover of the *Saturday Evening Post* or the calendar from Joe's Garage.

Maybe they can't remember catching such finny monsters in their own bent-pin boyhood. But I caught giant fish and lots of them from Clear Fork Creek back in those good old days, though the creek has shrunk greatly since that halcyon time.

The Heretics of Wildlife ought to face it: the Indians have a lot to teach us. Whatever became of them, anyway? Surely television hasn't killed them *all* off.

—Dan Saults, *Missouri Conservationist*

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Photo by Johnny Nicklas

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It's a Complex Business—

By **WILLIAM VOIGT, JR.**, Executive Director

Pennsylvania Fish Commission

(Editor's note: Senator Israel Stiefel of Philadelphia, has long had a keen interest in political science, what he terms "State Governance." He is compiling what he plans as a textbook on the subject of state governance in Pennsylvania. He asked the Fish Commission to prepare the draft of a chapter for the forthcoming book, on its historical surroundings and its current activities, including the policies and philosophies involved, and has kindly agreed to permit its publication in THE PENNSYLVANIA ANGLER. The following is the first installment; the second and third parts will appear in successive issues.)

PART I

THE PENNSYLVANIA FISH COMMISSION

Introductory

In one form or another, and for increasingly complex reasons, Pennsylvania has maintained some form of supervision or control over at least some of its fish resources, as well as those who either utilize or interfere with the fishery, for more than two centuries. Records searched refer to laws enacted as early as 1724, and it is possible that these were not the first.

However, it was not until 1866 that a specific state mechanism was set up by law to exercise certain formal controls and to seek specific objectives.

Experimentation has occurred at various times through the years as to the form of control, and the scope of authority given the administering body. Modification has also come in the manner of financing the agency. For the most part the changes have been evolutionary. They have been influenced by many things. These include, to some degree, problems that have proved of immediate interest and importance to the people. Others have been the development in Pennsylvania and elsewhere of improved concepts of the tasks to be accomplished, and new knowledge brought to the scene by the birth and growth of the still young science of fish management.

Currently, the mechanism for control is the Pennsylvania Fish Commission. This agency is unique in modern America, in that no other state has a separate independent administrative body concerned exclusively with the management of its recreational and commercial fish resources. In some coastal states separate agencies control and regulate commercial fisheries, but in the other states recreational fish management is one responsibility among several assigned to a single supervisory department or commission. Some states combine fish with game animals and birds. In others, agency control embraces these, plus state forests and parks, public lands, even minerals.

The statutory provisions under which the Fish Commission of Pennsylvania functions are, however, very much in line with those having to do with fish and



THE DONEGAL SPRING, near Marietta in Lancaster County, site of Pennsylvania's first state fish hatchery—a shad hatchery—established in 1873 and discontinued a few years later. Hatching ponds were built immediately below in the spring run which flows into the Donegal Creek, tributary to the Susquehanna River.

game management in other enlightened and progressive states, in the following specific aspects:

First, the governing body is a commission consisting of several persons (eight at statutory strength), appointed by the governor for eight years, and serving staggered terms (or until their successors are appointed and confirmed by the Senate). Since a Pennsylvania Governor may serve only one four-year term under the Constitution, it apparently was felt that no chief executive might have opportunity to appoint a Commission majority in order to gain control for partisan or other purposes.

Second, the Commissioners are responsible for the employment of an executive director, to supervise the work of the agency under the policies they lay down. The law does not specify that the employment must be made with the consent of the Governor. It does provide that the salary paid the executive shall have the Governor's approval.

Third, the operations of the agency are financed exclusively by the sales of fishing licenses and revenue from related sources, such as fines levied against violators, and receipts from the issuance of permits for commercial fishery activities.

Fourth, the revenue from these sources is deposited to a special Fish Fund, and is automatically appropriated for the use of the agency without legislative action, subject only to executive authorization by the Governor for the expenditure of funds in each biennial budget request. Such request must be based upon realistic estimates of anticipated revenue and, following approval, the budget may be utilized by the agency only under the usual and customary fiscal safeguards set up under Pennsylvania administrative law.

Fifth, while there is no civil service or other formal merit system for the employees, there is provision in law that regular salaried employees may be dismissed only upon order of the Commissioners sitting in regular or special meeting. Any employee so dismissed has the right of appeal to the established trial board of the Commission.

Sixth, the law provides that the Commission shall have broad discretionary powers with regard to the setting of fishing seasons, size and creel limits, and the devices that may be employed by the fishermen. Similar powers are vested in the Commission with respect to commercial fishing.

It appears to have been the intent of the General Assembly in the enactment of the Fish Code that the administering agency should exercise a considerable degree of independence from the operation of the patronage system, and under policy declarations dating back to 1935 employees of the Commission have been forbidden, under pain of dismissal, to engage in partisan political activities other than the normal exercise of the franchise. This intent also is implicit in the fact that the executive is appointed by the Commissioners, and serves at their pleasure.

SEPTEMBER—1959



THE PLEASANT GAP station of the Commission's Bellefonte hatchery system in Centre County as it appeared in 1905, two years after it was built. This building was later replaced by a two-story brick structure, the first floor of which still serves as a hatch house, with administrative offices on the second floor.

There may be significance, or at least pride, in the further fact that this modern concept of fish and wildlife control and supervision is the brain child of a Pennsylvanian. He is Seth Gordon, a former executive director of the Pennsylvania Game Commission. The concept was evolved in the 1920s while Mr. Gordon was conservation director of the Izaak Walton League of America. Later, in 1934, he was instrumental in having it accepted as the stated policy of the International Association of Game, Fish and Conservation Commissioners, the "trade association" of game and fish administrators and other policy making officials. It seems fitting that Mr. Gordon's former home state should be one of the nearly 40 in which some locally acceptable modification of the model administrative code now prevails.

Early History

It is ironic, and perhaps significant, that one of the earliest difficulties to beset the Commonwealth in the management of its fishery resources should still be a factor of importance more than two centuries later. This is the problem of manmade dams that block the free passage of migratory fishes that normally run in

AN EARLY 1920 scene at the railroad station in Corry, Erie County, in the days when fish for planting were delivered by rail. The Corry station was the state's first trout hatchery, built in 1876.



from the sea to spawn or, as in the case of eels, to grow in the streams to maturity.

As long ago as 1724 there was legislation by the colonial assembly to demolish and remove "fishing dams, wears and kedles set across the River Schuylkill," and in 1730 another act was made law to prevent "the erecting of dams, wears, &c., within the Schuylkill." Both laws appear to have been ineffective, and there are records of stormy conflict in those early years between Pennsylvania and New Jersey, its neighbor state to the east, over the placement of dams that barred the free passage of fish of the Delaware River.

Indeed, when Pennsylvania was later constrained to enact laws providing for a Fish Commission, in 1866, the chief reason for doing so was to try to find ways to pass fish successfully up and over dams that had been erected in the rivers of the Commonwealth. Dams impeded the shad, striped bass and other fishes in the Delaware, Lehigh, Schuylkill and Susquehanna.

The "Report of the Fish Commissioners" for 1892-1894 contains lengthy historical accounts of these fish passage problems, and of attempts through legislation and otherwise to overcome them. It seems worthy of special note that the three chief fishery problems mentioned then still plagued the fish manager of 1959. These were listed as obstructions in the streams, destructive fishing, and water pollution.

The 1866 Commission consisted of only one individual. By 1873 the Commission had been recreated as a three-man body, and in 1879 this became a six-man board. In 1903 the General Assembly provided for a Department of Fisheries, which lasted until 1923, when a Board of Fish Commissioners was established consisting of a Commissioner of Fisheries plus seven additional members. Under this act the Commissioner was appointed for a term of years and automatically served as President of the Board. The governing law was changed again in 1947, to approximately its present form. These were rather sweeping modifications that brought Pennsylvania into general conformity with the provisions of the model code mentioned previously.

In addition to striving to find a way to overcome the obstructions in the rivers that prevented fish migrations, the early day commissions concentrated considerable attention upon way and means to replenish depleted stocks of fish or to satisfy public demand for stocking, by the use of hatcheries. The first of these was installed at Donegal Springs, near Marietta, in 1873. It was utilized for hatching young shad, for the most part, and was abandoned after only a few years of existence. (While the record is unclear on the subject, it would appear plausible to state that there would be little reason to raise small shad to be sent down to the sea so long as dams remained to obstruct the upstream migrations of wanted adult fish.)

The next of these stations was the pioneer Pennsylvania trout hatchery, built in 1875 at Corry in Erie County. The present Fish Commission still conducts



THE FORERUNNER of today's "hatchery truck" loading up at Pleasant Gap in early summer, 1919.

fish rearing activities at this hatchery, at the same site.

Pennsylvania fishermen first became acquainted with the now commonly accepted fishing license in 1921. The first fee charged for the privilege of fishing in Pennsylvania was \$1.00. The license was increased to \$1.50 in 1927, to \$2.00 in 1947, to \$2.50 in 1953, and to \$3.25 in 1957.

These increases reflected both the growing demands of the fishermen for services, and the generally rising costs that, with variations in the curve, have been characteristic of this century.

The device of earmarking license fee revenues for the exclusive use of the agency in ministering to the wants of the fishermen, came into being in Pennsylvania with the very first dollar license in 1921, and this system has prevailed to the present. This system has a long history of common acceptance here, as well as in other states. For the most part it has worked out well, although it does have its limitations. Because of its existence, the agency is not in position to ask the General Assembly for additional funds from the General Treasury to meet an emergency and its activities are limited to those made possible by the revenue accruing from license fees and related income. On the other hand, it is argued that the Fish Fund should be and remain inviolate, that the fishermen want it that way, that they alone contribute to the support of the fishery, and that the fund does not constitute a tax upon the citizenry at large. For these reasons sportsmen have wanted the money earmarked so it would not be vulnerable to legislative diversion.

Modus Operandi, The Commission

Pennsylvania law does not provide for nonpartisan or bipartisan appointments to the Fish Commission. This has been enacted into law in certain other states, but the General Assembly of the Commonwealth chose simply to say that the Governor should select "competent citizens." The chosen citizens hold positions of honor and trust, and carry considerable responsibility, but they serve entirely without pay and receive only their reasonable and necessary travel, housing and

subsistence expenses while engaged in official commission business.

The law provides that the Commissioners shall be appointed from "districts" consisting of named groupings of counties. This conforms in essence to the system of congressional and legislative districts that long has been in vogue in this country, and it is generally accepted as desirable by the fishing public.

When all aspects of being a Fish Commissioner are considered, one may properly marvel that citizens will solicit appointment or, having been appointed, will cheerfully and earnestly accept the public service responsibilities entailed.

It is no secret that the Commissioners are bombarded with letters, telephone calls, telegrams and personal appeals by or from organized and unorganized fishermen seeking assistance in one form or another. Shall this stream or that be stocked with fish? If so, with how many, and of what kind and size? Shall there be a stream improvement project on such and such a creek? Shall the son or daughter of a neighbor or other friend be given a job by the Commission? Shall a new fishing lake be built near a certain community? Shall research activities be carried out in a certain area of interest? Is someone unhappy over a fish stocking or other decision recommended by the fish management staff? Did a fisherman anchor his boat in a recognized water skiing channel? Has a fish warden arrested a friend who—perish the thought!—positively never could have been guilty of a law violation? These and scores of other questions and appeals are constantly aimed at the Commissioners.

Newly appointed members of the Commission usually are the most vulnerable. They often have had little experience in such things; they know not what they are letting themselves in for when first they go out of their way to respond. In their zeal to see that the fishermen of their districts are pleased, they may tend at first to forget that a trained and experienced corps of career workers and professionals is at the central headquarters in Harrisburg and in the several field offices, to screen such things to determine merit, and to handle routine detail.



PART OF another early "state" hatchery at Pleasant Mount in Wayne County, established in 1904.

The appointees usually learn quickly to sift the requests, to "buck" to the professionals problems they would rather not handle themselves, to ask the inquirers to go to the persons of the staff who either have the answers at their finger tips or know how to get them, and to take a deep personal interest only in those policy making matters that the law appears to intend to be their primary province.

Ulcers, wakeful nights that result from 2 a.m. telephone calls, the worry that goes with constant streams of pleas that interrupt normal routine, the strain of trying to earn a normal livelihood while seeking to handle a variety of extracurricular matters—all these take the appointee far out of normal avenues of life. To some, this sort of thing can be exhilarating and desired. To others, it can become a menace to health, or work that they learn to shift over to those paid to deal with them. Only after they begin to screen such problems do most appointees begin fully to enjoy the fruits of unselfish public service, which comes in the form of unsolicited honors from organized sportsmen and other segments of the public, invitations to speak and otherwise to be recognized for time and effort expended for the advancement of an increasingly popular form of healthful outdoor recreation.

Although the law specifies that the Commissioners shall be the administrative body, the phraseology of the statute seems to imply that they shall act in a manner corresponding to that of the board of directors of a corporation. Such a board of directors normally confines itself to making policy decisions, and delegates other duties and functions to the general manager who, in turn, must himself delegate or be swamped by a mass of intricate detail.

To a significant extent this has been the system followed in the Fish Commission in recent years. It can and does vary from time to time according to the wishes of the Commission majority, which is a very natural situation.

With few exceptions, the present Commission, as of 1959, has largely concentrated on policy making functions. It has reserved to itself the selection of personnel to be employed in supervisory and technological capacities, and all of the enforcement staff. However, even in this, it has often accepted the recommendations of the staff. It has reserved to itself final determinations as to fish stockings to be made in the waters of the Commonwealth, although it has accepted many of the guideposts offered by the staff. Beyond this, after policy determinations have been made, the carrying out of policy has generally been left to the executive director and the staff supervised by him.

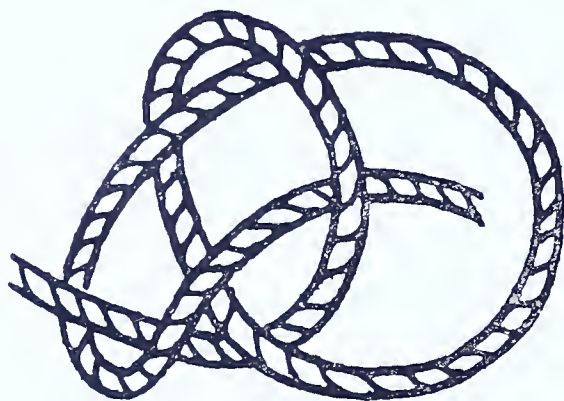
(The second and third parts of this chapter in Senator Stiefel's book will deal with Commission activities at the staff level, with its boating responsibilities, with changing concepts in fish management and administration, and with important auxiliary activities that have a bearing on the subject.)

Basic Knotmanship

Undoubtedly the Phoenicians, those early sea rovers, were experts with lines and knots—and the knots needed by an outboard skipper today are probably the same ones they tied 3,000 years ago.

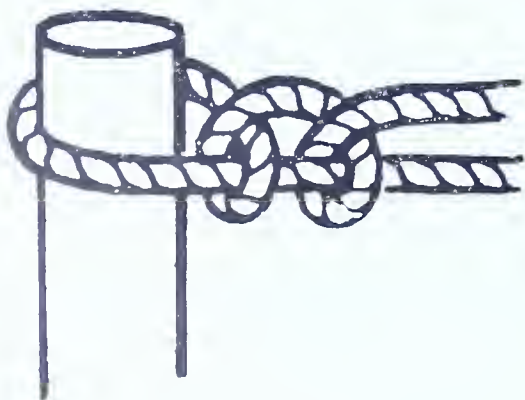
There are some 3,100 examples of various knots, ties, splices, etc., in the Encyclopedia of Knots and Fancy Rope Work. For the average outboarder a half-dozen are all he needs to know. And if he really wants to be an "old salt" he can add others.

Knots and hitches he must know are: a bowline, two half hitches, a clove hitch, a square knot, and a sheet bend.



Bowline

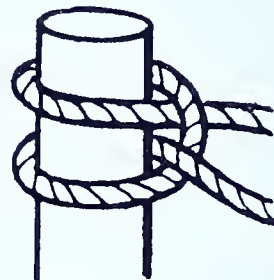
The bowline, used when a permanent loop is needed in the end of a line such as when making fast to a pier, is made by making a loop (a bite) in the rope (line) and running the free end through the bite, around the line and then back through the bite. In learning this knot, the beginner should practice tying it around the leg of a table, an arm of a chair or even a piling down at the dock.



Two half hitches

The two half hitches are simple to make and are done so by bending the line around a post or piling and then over and under the long end of the line and

then over itself, then under and up through the loop formed by the turn.



Clove hitch

The clove hitch, used to make fast to a piling only temporarily, resembles the two half hitches with the hitches made around the post or piling as illustrated in the drawing.



Square knot

The square knot, used to tie together lines of the same size, is easy to make by remembering the rule: Left over right; right over left.



Sheet bend

The sheet bend, used to tie together lines of different sizes, is made by making a bend in the larger line and then running the smaller line up through the bend, around it, and then back through and under it.

In addition, the seasoned skipper should know how to make a short splice. A splice is nothing more than weaving a piece of line back into itself or into another piece. They look better than a knot and are

stronger. (A knot takes away 45 per cent of the original strength of the rope while a good splice takes away only about 10 per cent.)

Another part of being a seasoned skipper, wise in the ways of marlinspike seamanship, is to know the proper care of rope. He will:

Make sure all kinks are out of the rope before using it.

Keep his rope clean.

Store the rope in a dry place away from excessive heat and moisture.

Protect it from chafing and abrasion.

Protect the rope from chemicals such as acid from batteries, paint, drying oils as well as metallic rust.

Never use rope that has been frozen without allowing it to thaw out and dry.

To make sure rope is serviceable during a season's usage it should be inspected inside and out. On the outside, the skipper should look for signs of abrasion and broken fibers. The fibers should also have a cer-



Fastening to cleat

tain luster to them without any signs of brittleness or limpness.

Inside, the rope may be inspected by twisting the strands against the lay. If the inside is bright, clear and free from spots of discoloration chances are that the rope is in good workable condition.

Rope, be it the anchor "rope," the "painter," the mooring "line" or the bell "rope," is a vital part of boating and as much a part of your boat's equipment as the paddle and running lights. It is truly a seasoned skipper who knows how to tie it, to care for it and to inspect it, for the safety of the boat depends upon it.

ANGLER'S QUIZ

By Carsten Ahrens

Motor Boat Questions

1. If a stream is 180 feet wide or less, no motor over 5 horsepower may be used.
2. A license is required for any person to operate a motor boat.
3. The license fee is \$1.00 for (each cylinder or each horsepower) of the motor.
4. The license fee is \$1.00, \$2.00, \$3.00, \$4.00, \$5.00 for an electrically propelled boat.
5. The license plates should be plainly displayed on the bow, on the stern, on each side of the bow of the boat.
6. The person issuing licenses may charge and pocket a fee of 10c, 25c, 50c, 75c, \$1.00 for issuing same.
7. A person issuing licenses must give bond to the Commonwealth of \$300, \$500, \$750, \$1,000 before any supply of licenses is delivered to him.
8. A person can—cannot transfer license plates from one motor boat to another (if it does not have more cylinders) provided he notifies the Dept. of Revenue within 10 days.
9. The license year runs from January 1-December 31, April 1-March 31, July 1-June 30.
10. State-owned and operated boats have special licenses which are issued free, at half price, at full price.

Answers on Page 14



"HOWDY"—the raccoon—says:

Don't be a litterbug!
You CAN take it with you.

in the second year

FISH FOR FUN

*Pennsylvania's experiment on Left Branch Young Woman's Creek
is beginning to provide some answers.*

By DAN REINHOLD, Biologist
Pennsylvania Fish Commission

PHOTOS BY JOHNNY NICKLAS



MORE THAN a foot of fun about to be released by Todd McCarthy of Pittsburgh to provide more of the same again and again.

They said it couldn't be done—that fishermen would not accept a stream where the sole object was fishing for fun, instead of a creelful of fish.

It has been done, and here in Pennsylvania. What's more, the wish for similar "fish for fun" facilities close to home has been expressed by many who enjoyed the unusual experience of catching from 40 to 50 trout in a few hours time.

However, like the scientific advances in today's space age, there's more to it than meets the eye. Another similarity are the spans of time involved. Rock-etry began shortly after the Chinese discovered gunpowder. To fish for fun may well be said to have had its beginning long before that—when primitive man fathered the idea and caught an extra fish or two beyond his immediate needs for the sheer pleasure of it.

The "father" of the modern fish for fun concept in America is Dr. Albert S. Hazzard, assistant executive director of the Pennsylvania Fish Commission. While director of Michigan's Institute for Fisheries Research, "Dad" Hazzard wrote his modernistic views in an article entitled "Better Trout Fishing— and How" for the August, 1952, issue of SPORTS AFIELD magazine.

The "Hazzard Plan" as it has become known in fishery management circles, was simple in concept. Briefly, it suggested: trout fishing the year 'round, but kill no trout. If the desire is for "eating" fish, the local market is the easy and economical source.

Many conservationists, both professional and amateur, accepted the idea as "that which must come," but were hesitant to be the first to give substance to the concept. In 1954, the United States Fish and Wildlife Service took the step in cooperation with the National Park Service in two streams in the Great Smoky Mountains National Park—the Bradley Fork in North Carolina and the West Prong of the Little Pigeon River in Tennessee.

Angler enthusiasm was slow in mounting. However, once it got started it couldn't be stopped. More area, but on a part-time basis, was added in 1955 to satisfy the demands. The new stretches there were opened to usual fishing during the regular season (May 16 to August 31), then allowed to remain open to fun fishing the rest of the year.

The Hazzard Plan remained confined to these waters until 1958 when a "spot fire" broke out in Pennsylvania.

These first embers were kindled when the author, then regional fishery manager in the north central Pennsylvania region, proposed a research project in which trout would be studied in their natural environment. The proposal incorporated a modified Hazzard Plan that would allow trout to be studied through their entire life, not just until they reached the creel. Given the nod, the machinery was put in motion to develop a complete plan.

A stream had to be selected that had good natural trout reproduction; that was in an area where ample trout water was present; that was easily accessible, and that was close to other streams for purposes of comparison as to catch, fishing pressure, biological factors, etc. Also, the feelings of local fishermen had to be thoroughly investigated.

The Left Branch of Young Woman's Creek in northern Clinton County was selected as it met most of the requirements, including the fact that there were several hundred miles of good trout streams in an easy reachable radius.

In January, 1958, the Pennsylvania Fish Commission approved the initiation of what was to be an experiment to determine (1) the fate of trout under fish for fun conditions and (2) the sociological success of and the problems involved in this type of fishing. This article deals with the history and general background of the project. A later article will more specifically treat the purposes and the findings—biological and sociological—of the experiment.

On April 15, 1958, as the sun rose over the snow-blanketed north slopes and icy margins of Clinton County's trout streams, shivering opening day fishermen were plying their art. However, on the Left Branch the quiet of the spring morning was unbroken. It was afternoon when an adventurous couple arrived to try this new idea—a last resort sort-of-a-thing. They caught fish. They had fun. They told others. A fish for fun stream was born in Pennsylvania.

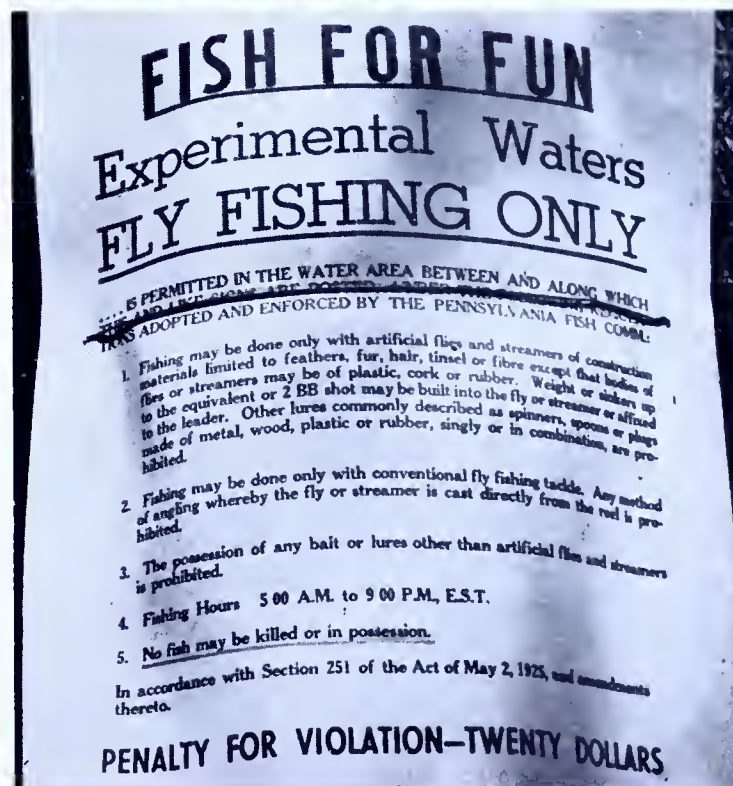
Despite a Commission announcement well in advance of the season via wire services, outdoor writers, press and radio, few people other than local gave much thought to or knew about the experiment. The local people refused to fish it. Growing up was a slow process. However, in early June the first breakthrough came. Joe Pancoast, field sports editor of the Philadelphia Evening Bulletin, took a "look-see," as he put it. He liked what he saw, enjoyed the fishing and wrote a series of articles on it. Other writers followed suit. Popularity increased and soon confirmees of fish for fun were to be found in every corner of the Commonwealth.

Meanwhile, all elements of the experiment were being pursued. During 1958 and 1959 anglers were interviewed on the Left Branch, on the near-by "fly-

fishing only" stream—the Right Branch of Young Woman's Creek—on the main stem and other near-by "open" streams.

In addition to general questions about themselves, fishermen were asked: "Why do you fish?" "For what species do you prefer to fish?" "What species, size, number of trout do you prefer?" "Do you like fly-fishing only streams?" "Do you like the fish for fun idea?"

Some interesting and enlightening answers and some with unexpected frequency were forthcoming. The majority of anglers, no matter where interviewed, felt that the size limit on trout was too low; that the bag limit was too high; and that eventually the fish



THE SIGNS that tell part of the story.



THE RIFFLE-POOL section pictured above meandering through dense woods and the steep mountain backdrop are typical of the stream in mid-July. Working upstream and into the riffle on the Left Branch, midway in the "lower stretch," is Gilbert Morris of Newton, Pa. (Below) **THE SHINGLE** Branch tributary near its mouth. From this point the ratio of brook trout to brown becomes progressively greater.



for fun concept must be more generally accepted and applied, although many of them did not want to see that day.

The most startling development was the frequency with which family groups were observed. It was anticipated that this stream would be most utilized by the "pro" fly-fishermen. But they actually were outnumbered by "ma-pa-kids and all" on camping-fishing trips. Much enthusiasm was found among parents teaching their children to fish for trout. Many a beginner caught his or her first trout there. While they may only catch a few, enthusiasm is kept high by the great number of fish to be seen. But mostly, parents have been able to teach their offspring to respect the life of a trout—to return it to be caught again another day.

Also noteworthy has been the proportionately high number of handicapped people to fish the Left Branch. The unanimous reason being: "We have a chance to catch fish here and are not crowded out by inconsiderate anglers." It is evident that the anglers fishing this stream are more courteous and friendly than the majority on open waters. This is presumed to stem from the fact that they are there for fun and not fish in the creel.

Is fishing good? A. W. Miller, better known by his pen name "Sparse Grey Hackle," wrote up the project in the December, 1958, issue of *SPORTS AFIELD*. "Sparse" reported it so. He also disclosed its potential for improving the local economy.

Also, in the December, 1958, *ANGLER* Tom Forbes' "Put 'Em Back Alive" story answered this in part by quoting others who fished there.

To them can be added this typical exchange of several weeks ago between the author and an angler: "No, fishing isn't too good today. I've been out since 7 a.m. and only released 26 trout" (it was near noon). The opinion was expressed that this was a good catch. "No, last week I caught 160 one morning." Subsequently it was learned that he had fished this stream for 40 years and that "fishing is better now than it ever was, even when this country was nearly inaccessible." He went on to explain that in those days a few fishermen fished until they couldn't carry any more trout. "The result of that by a few," he reflected, "caused some streams to be 'fished out' even then, just as today's many anglers each taking a few fish can cause streams to be fished out."

Another phase of this project is the natural history studies of trout. All through 1958 and up to the present, electro-fishing has been carried out. The trout captured have been weighed, measured, aged through scales ring determinations, jaw tagged then returned to the water. As a result, over 1,000 resident trout are now known individuals. Some have been recaptured, thus growth, migration and other facts have been determined. One trout (tag No. 1) has been recaptured by electro-fishing three times and reported caught by anglers on two other occasions. As time goes on it

will be learned how many times an individual trout might be caught—how much sport it can provide. This latter is one of the experiments aspects that will be covered in a later article.

The Left Branch of Young Woman's Creek is located in the mountaineous area of north central Pennsylvania. Most of its watershed is owned by the Pennsylvania Department of Forests and Waters, whereon camping is allowed provided a permit is obtained. Such permits are available at reasonable cost from the Forest Ranger for the Young Woman's Creek division of the Sproul State Forest in Renovo, or the forest district office, also in Renovo. Available too are the regulations on camping and fires and public use maps of the forest. Requests for the map should specify Susquehannock and Sproul State Forest. There are several state-owned cabins along the stream that can be rented during the summer.

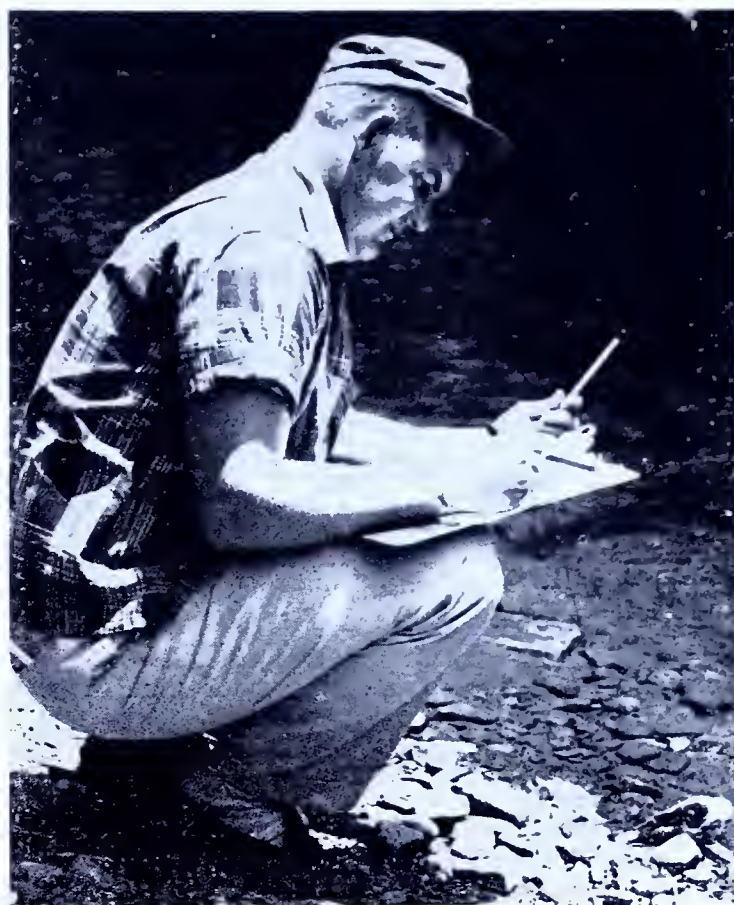
For information concerning local fishing and fishing conditions, inquiries should be directed to the Fish Commission's regional office in Lock Haven at 644 W. Main Street. The Commission's new waters-highways map of Clinton County also is available there at 35c each.

Young Woman's Creek watershed is typical of the Allegheny range and the mountains are quite steep, fairly uniform in height and very picturesque. The range forces the Susquehanna River to flow northeast to North Bend, where it then swings southward. The stream's levels in the watershed fluctuate rapidly and often. Because of their steep gradient they are difficult to fish in normal early season conditions or following heavy rains. Also, for the same reason relatively low and extremely clear flows occur during the drier months of the year.

The Left Branch joins the Right Branch to form the main stem Young Woman's Creek two miles north of where it flows into the West Branch of the Susquehanna River at North Bend, which in turn is five miles east of Renovo on U. S. Route 120. The two-mile main stem is "open" fishing water. The Right Branch is a fly-fishing only stream for a distance of seven miles. It is paralleled by a paved road along most of its length. A good dirt road parallels the upper portion.

The Left Branch is paralleled by a good (during the summer months) forest road. Three-fourths of a mile above its confluence is the down-stream limit of the experimental area which is marked by a four-foot sign. Along the ten miles from this point northward, the stream, and the road to the upper end of the experimental watershed which includes tributaries, are well posted with regulations' placards.

For purposes of fishing, the stream presents three distinct environments. The lower stretch up to the mouth of Shingle Branch, a distance of approximately two miles, averages twenty feet in width and consists mainly of shallow riffles, interspersed by deep bedrock and boulder pools. It affords easy fishing. Here the brown trout outnumber the brook trout by about three



STUDENT WARDEN Bernard Ambrose taking a stream temperature reading, part of the regular record keeping attending the experiment on the Left Branch, its fish and fishermen.

to one. As natural propagation and survival is good, their sizes range up to 9 inches among the brooks and to 14 inches among the brown trout. Catches as high as 25 trout per hour have been reported by expert anglers, when the brown trout are working.

The middle stretch is about three miles long from Shingle Branch up to Greenlick Run and averages 14 feet in width. Because of the numerous dams built by the Department of Forests and Waters in the middle '30's, this area is known as the "fish dam" stretch. Here the road runs high above most of the stream, giving the fishermen the feeling of wilderness. Even the numerous trails that follow down small spring runs are difficult climbs. Parking is limited along this stretch to two places and only at these points is it recommended that cars attempt to turn around. The fish present in this area run approximately half brown and half brook trout. The brook trout are somewhat larger than their downstream cousins. The brown trout are smaller.

The upper stretch above Greenlick Run is a typical "brookie" stream, as are the Shingle Branch and Greenlick Run. Large pools are not common and at first look, especially during low water periods, it would hardly seem worthwhile to fish these waters. However, quite often when the fish are not working in the downstream areas, the day can be salvaged by the excellent brook trout fishing the upper areas afford.

In the lower reaches of the upper stretch and tributaries, the population ratio is brook trout three to one

and the range up to 8 inches long. The upper reaches of these waters are limited almost exclusively to quite small native brook trout. For the most part these waters are not paralleled by roads and usually the best bet is to park at their lower ends and fish up.

Yes, fishing in the Left Branch of Young Woman's Creek is good. It is better than any comparable stream

elsewhere in Pennsylvania and beyond. And, in case the point has been missed, without stocking. So, for fishermen who have become reconciled to catching just several trout in an entire season, here, with even less than average talent, they should catch as many in one day. Whatever their skills as fishermen, fishing is better on this stream. And, most of all, they will have fun.

Angling ABC's

CRICKETS AND GRASSHOPPERS AS BAIT

The beginning bait fisherman often restricts himself to one or, at the most, two baits—worms and minnows. It cannot be denied that this pair will account for a lot of fish, but it is not wise to get into a rut when there is an abundance of other effective live bait readily available to anyone who wants to collect it.

Take the cricket for example. More and more bait shops are carrying southern gray crickets for sale, but you can easily collect all of the wild, black northern ones that you can use. They make wonderful pan-fish bait, and trout go for them in a big way.

If you buy your supply, the procedure is simplicity itself. You can pay your money and then carry them away in a special cricket cage, but an ordinary minnow bucket also makes a good carrier. Just dump them into the inner perforated section, and there they will stay until you are ready to use them. You can keep them indefinitely if you toss in a couple of lettuce leaves every day.

Collecting Crickets

If you want to collect your own crickets, you can turn over boards and stones and grab at the crickets that immediately scuttle for the tall grass. But there is an easier and less active way than this. Get a loaf of unsliced bread and cut it into halves. Dig out the interior, leaving only a shell of crust. Put the halves together and tie them in place. Cut a small hole in one end and place the contrivance in a meadow inhabited by crickets. Leave it overnight, and in the morning you should have a lot of bait.

And you will need a lot, because the cricket is not durable. You can hook it through the soft abdominal section, but it tears off very easily. Another somewhat more durable way to hook a cricket is to insert the barb of your hook under its collar (thorax). But the fish hit them so well, when they are in the mood to hit at all, that the ones you lose don't matter. Use a fine wire hook when fishing with crickets.

Bluegill Rig

The cricket is a fine bluegill bait. Frequently, all you need to do is to run a hook through a cricket, toss

it into the water, and you are immediately connected to a scrappy little bream. But now and then this does not work too well. When it does not, a hook with a bit of dressing will often turn the trick. The hook is a simple contrivance, consisting of a long-shanked hook with a couple of tufts of white rubber hackle fastened to the shank, the cricket being hooked as usual. It is difficult to say why the rubber hackle makes such a difference, as you do not work the lure in any way; you just toss it into the water and let it stay there. It will frequently stimulate a bluegill into biting when he will turn up his nose at a plain cricket.

Hooking Trout

Develop your striking reflexes by using crickets on brook trout. Use about a No. 12 hook, and about eight inches above it place a small cork ball on the leader. Cast this out and let it drift with the current into pools and eddies. The instant the bobber twitches, strike. If you are fast enough, you will hook a fair percentage of the trout that hit—in the front of the mouth where you can unhook them without damage. Do not take time to let the fish swallow the cricket or you will be unable to unhook them without mortal injury.

Catching Grasshoppers

The grasshopper is another natural bait that is free for the taking. Because grasshoppers are more agile than crickets, some people give up the attempt to catch them and use something else.

It is easy to catch grasshoppers on a cool morning. When the temperature is low, they cannot jump and can be picked off the tall grasses. On warm days, however, a net is effective. A regular insect net does the work, but you can easily make a net with a stick for a handle, a wire hoop, and a cheesecloth bag. You catch the hoppers by walking through a meadow and sweeping the net back and forth in front of you. You will catch plenty of grasshoppers, and undoubtedly a lot of other insects that make good bait, too.

Grasshoppers can be transported in a cricket cage, but an efficient carrier is an old sock; once you put a hopper into one, he will stay there until you remove him.

Are You a Sportsman?

By WEBB MIDYETTE

The other day a group of us were discussing the idea of placing signs along our trout streams calling attention to *sportsmanship*. We envisioned a sign to read: "Attention, Fisherman: Please cooperate with landowners by taking care of property on this stream. Otherwise, the stream will be closed to fishing."

What does this mean? What does sportsmanship, in fine print, really mean?

More than thirty years of law enforcement experience makes me believe one thing in particular—we *all like to be called sportsmen, but very few of us really are*.

We all should know that living right is only to practice the Golden Rule. Most of us believed this as boys. Why not believe it now—only more fervently—as we grow older? The man who "stretches his limits" or "takes a little more than his share of game fish" or "sneaks a few out" before the season is no sportsman. Neither is he true to the teachings of the Golden Rule. We know that there are a lot of good, avid souls who do not think it is bad to take an extra fish, animal or bird. Their excuse is simply, "Well, I don't go hunting and fishing very often, and I might as well get them while the getting is good." Is this sportsmanship? Is this treating your fellow hunter or fisherman right? What about the landowner? When we hunt or fish (of course, with his permission) on his lands or in his waters, do we share our creel or bag with him? Is he not sharing in the production of these things?

Yes, sportsmanship is very much like "Mark Twain's weather"; we talk a lot about it, but do nothing about it. We need less telling and more doing.

There are just too many of us for each to have his own way, or to try to exercise a law unto himself. By following this pattern we would become a nation of men each led by his own conscience—every man a law

unto himself—instead of a nation of men governed by constitutional laws and sovereign rights.

Thomas Jefferson and John Marshall both said, in effect, that the common good must override the personal good (largely selfishness) of individuals. If such were not the case, we would be a nation of bandits.

Folks, for the most part, are fairly good at observing the game and fish laws, and it is only the occasional sneak, pilferer or game hog, and the unthinking individual, that shows himself and needs to come under the law. If more hunters and fishermen, who wish to be known as *real* sportsmen, were good custodians of their sport and exercised stewardship, there would be more of everything in the great outdoors to go around. The real sportsman not only should observe the game and fish laws himself, but should do everything in his power to see that others also observe the law. However, it would appear, as someone has so rightly said, that the enactment of laws does not make men nobler, but craftier.

The job of game law enforcement cannot be done by the warden alone. There are too many people and too few wardens. What is needed, and what we must have, is more individual citizenship responsibility in the observance of game, fish and conservation laws. And by citizenship responsibility is meant, also, the reporting of law violations whenever and wherever they occur. It is advising the warden or personally being concerned about the violations in question. Yes, it's even assisting him and other law enforcement officers in actually apprehending the violator and bringing him to justice.

If this is done we will be worthy of our God-given heritage of the great outdoors and on our way to meriting the badge of true **sportsmanship**.

Virginia Wildlife

PLUG OR LURE?

By JOHN F. TAYLOR

What's the difference between a plug and a lure? This bewildering question has caused many an angler to become involved in deep thought. It is to these fishermen this article is dedicated. Of course, there are a few who don't care **WHAT** they have on the end of their lines, just as long as it catches fish! But to those who **DO** care, at least enough to know what it is, this article will prove to be of some value.

Actually, there is no "plug" listed in the dictionary

as a fishing lure. There are a fire plug, an old worn out horse, a plug hat, to hit with a fist, and a thousand and one other things, but no fishing plug. The name probably came from the fact that the first fishing lures were carved from "plugs" of wood.

A lure is listed as (quote)—a bait, especially an artificial one, used in fishing. (unquote) Obviously, we could say that all plugs are lures, and all lures are NOT plugs. So, what's a guy gonna do?

Williams Appointed Member of Fish Commission



Mr. Williams

Raymond M. Williams of East Bangor in Northampton County, became the Fish Commissioner for the southeastern district of Pennsylvania in mid-August, when the Senate confirmed his nomination made two weeks earlier by Governor David Lawrence.

The new Commissioner fills the vacancy on the eight-man body created two years ago when Charles C. "Jack" Houser of Allentown resigned for reasons of health. The term will extend to January, 1960, or until a successor is appointed. The full term of a Fish Commissioner is eight years. The district he will represent on the Commission is comprised of Berks, Bucks, Chester, Delaware, Lehigh, Montgomery, Northampton, Philadelphia and Schuylkill Counties.

Co-owner-operator with his brother, Charles, of the Green Walk Trout Hatcheries, located near East Bangor, he is 37 years old, has been active in Northampton County sportsmen's circles, is an immediate past president of the Lions Club and a member of the East Bangor Borough Council. He is married and has one daughter.

Night Life of a Bass

The largemouth bass has been called a lot of names—some respectful and some unprintable. However, no one has yet come up with a label to describe its nocturnal roving, a habit shrewdly exploited by experienced fishermen.

Bass, and most of their aquatic cousins, are notorious nighttime carousers, notes the Mercury outboard company. During summer, especially, bass spend the day in deep, cool waters, lying practically dormant and unresponsive to the most tempting hook-laden proposals. But when the sun slips over the horizon, these wily gamesters go on the prowl and the tempo of fishing picks up.

One reason being, it is presumed, when evening cools the surface, bass move upwards and feed off the top waters. And, at such periods, they may hit

with reckless abandon. Night feeders rarely follow a lure as they often do during the daytime. Instead, they strike quickly and with great force.

Mercury says the best technique for catching fish by starlight is to cast surface plug with a loud splash right next to the shore. Let it lie motionless for 30 seconds, then retrieve with a perky motion. "Old linesides" will investigate this "goody" with about as much caution as a parking lot attendant displays when jockeying cars into position.

While this night life of bass is well known, the exact feeding times cannot be predicted. It may occur during any period from dusk until dawn, and may last only a few minutes. So, when you try your hand at night, be prepared to stick it out. Fish long and patiently, you'll hit the jack pot before the night is over.

Answers to QUIZ

1. True
2. True
3. \$1.00 per cylinder of the motor
4. \$2.00
5. On each side of the bow of the boat.
6. 25c
7. \$1,000
8. Can
9. April of one year to March 31 of the succeeding year.
10. Free

for those who fish...

FISHING IS GOOD

in Pennsylvania

A few of the many good catches reported to the ANGLER from across the Commonwealth that have been documented with photographs. Further proof that Pennsylvania's rivers and lakes afford good fishing for those who really fish.



(Above) RICHARD LEWIS, Exeter, took this 32" 11¼ pound lake trout from Harvey's Lake, Luzerne County, while deep trolling a "Christmas Tree" with a spinning outfit. Photo by J. M. Koval, Wyoming.

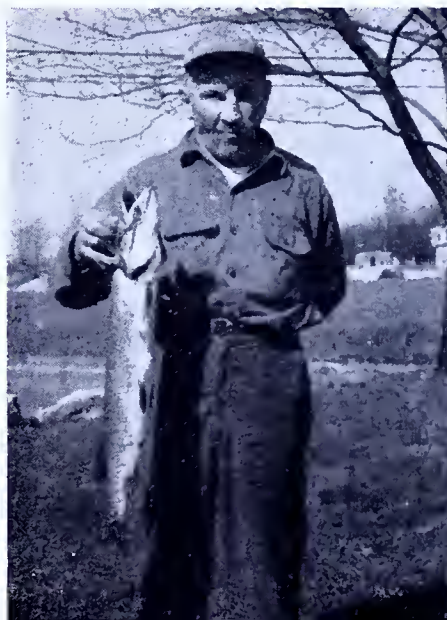


(Left) EDWARD T. GRAY, Meadville, and walleyes taken on a spinner-fly combination from the Allegheny River near Tidioute, in Warren County. These weighed up to 4 pounds. Several smaller walleyes and a 26" muskellunge were returned during the session. Photo by Photo-Graphic Arts, Meadville.

(Bottom Left) A PAIR of Joes—Ochreiter and Alexis of Port Griffith, Pa., with a catch of walleye ranging up to 32" 10¾ pounds, taken from Lake Wallenpaupack, Wayne County, by casting and trolling the yellow Abu on spinning outfits. Photo by J. M. Koval, Wyoming.

(Bottom Center) TOFIEL KARCESKY of Fayette City, with a 28½" 5¼ pound northern pike taken from the Youghiogheny Reservoir, Somerset County, with a black and white streamer on a fly rod.

(Bottom Right) SHARON MILLER with a 42" 23 pound muskellunge caught by her father, Hiram, of Knox, Pa., in the Tionesta Creek, near Kellettville, Forest County, while spin-fishing with a C-P Swing on a 10-pound test line. Photo by Oil City Derrick.



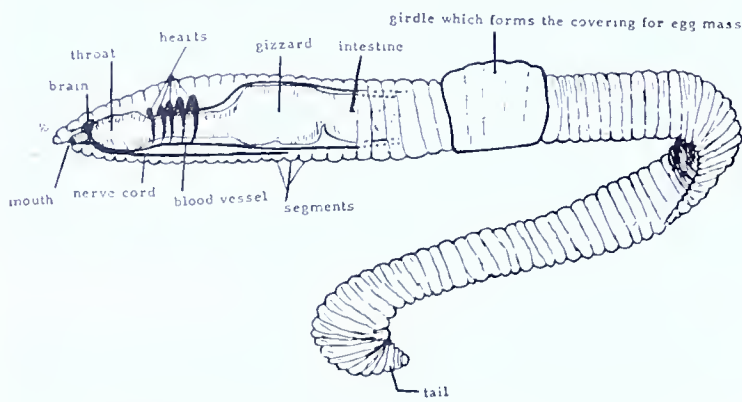
THE EARTHWORM

To the boys who peer through microscopes, they are called *Annelida*.

But to the boys on the end of a fishing pole, or the fish swimming around in a pond or stream, they are called just plain red worms.

Either way, the worm is a fascinating critter, and probably the most consistent fish-catcher of them all.

There are an awful lot of different kind of annelids in the world—more than 8,000 different kinds have



been catalogued by biologists. Basically, they are all the same; they are animals made up of little rings. In outward appearances, however, they differ quite a lot. Leeches are close cousins of the fish-worm, and while you may think a worm is just a worm, in Australia they grow to 11 feet in length!

Worms crawl mostly in one direction. The end in front is actually the head. It has a mouth and takes in food—quite normally. This is sort of a mechanical job, for the worm has no brain, just a blob of nerve tissue.

Back of this "brain" is an enlargement of the mouth called a throat, and behind that a greater enlargement called a gizzard. In this respect the worm is very much like the early bird that gets it. Neither of them have teeth, so they must have gizzards to "chew" their food.

The worm is a rather big-hearted chap. In fact, he often has more than one. But it's a heart in name only, for it consists actually of enlargements in the blood vessels located near the throat.

The thing most fishermen are concerned with as far as Mr. Worm's anatomy goes is the large band around the middle. This *Clitellum*—oh, all right, call it a girdle if you will—produces the material that covers the eggs. When eggs are deposited, this girdle strips off the worm's body like a ring and is called a cocoon. The young worms hatch from the egg in-

side this case. Because the girdle is made of sterner stuff than the rest of Mr. Worm, it's the logical place to first slip the hook through, to hold the wriggler firmly as he dances around the bottom of a stream luring Mr. Fish to his doom.

Quite a few misconceptions about worms have grown up over the years. The most persistent—and quite false—is that if a worm is cut into pieces, each will form a new worm. The truth is that if a worm is cut in half, the front end will grow a new tail. But the tail end also grows a new tail, too, and therefore starves to death!

Earthworms, of course, live in the earth. They feed on bits of decaying plant and animal material, and swallow much earth. They come out of the burrows at night and on cloudy days. They are also out in large numbers right after a rain, as the robins and other wise birds well know. Contrary to another popular belief, worms are not "rained down." Rather, they are "drowned up." When heavy rains soak the ground, the worms, which breathe air, must come to the surface or be drowned.

This is the time for a fisherman to fill his hat—without digging.

You'll find worms by the hundreds on any old lawn in any old and well cultivated district or park, and with a little care they can be kept hale and healthy until you are ready to go fishing. Build a good, big plywood box, put screen wire-covered drain holes in the bottom. Fill with loam made from 75 per cent dead leaves; never use any green stuff. Equip the box with a cover or the worms will crawl off into the night. Keep them moist, not wet, and don't let them freeze.

If you want nice clean worms all the time, a foot-thick layer of moss on top is a good idea, and provides you with excellent material when you want to carry the worms to and from fishing forays. Some fishermen like to feed their worms. A sprinkling of oatmeal is often advocated as both food and a cleaner to keep worms sparkling bright and attractive to fish. Others simply advise adding more dead leaves to the box from time to time. Maple leaves are favored, if you want to be really fussy.

However you collect or care for your worms, rest assured that they are Mr. Fish's Number One dish. For that reason, they are most definitely worth the trouble—the salt of the earth, you might say. . . .

British Columbia Northwest Sportsman

THE REPRODUCTION OF FISH

By **DAVID GUNSTON**

Hampshire, England

Like all animals, fish start life as eggs produced by their mothers, but the way in which these eggs, which may vary in diameter from half-an-inch down to one-eightieth, are fertilized and subsequently developed, falls into three distinct categories. By far the commonest is fertilization by the male fish and development outside the mother fish's body. Less common are instances where eggs are fertilized internally, and then develop outside. The third method, limited to viviparous fish like the sharks, is for the eggs to be fertilized internally and the young to grow internally as well, being subsequently born rather than hatched.

The first system is admirably suited to fish in its very simplicity, and its inevitably hit-or-miss procedure is offset by nature's amazing fecundity as shown by the vast numbers of eggs laid by each female fish. Fish eggs are nearly always produced in abundance. Actual counts of ripe eggs from normal-sized females have yielded staggering totals, from 2 million carp eggs to 160 million ling eggs. Trout are small egg-producers at 4,000, but 9 million from a 70-lb. cod and 15 million from a 28-lb. conger eel are typical. Eggs that are shed into the water may either drift or sink, and as a rule it is the very small ones that drift with the currents. With the cartilaginous fish (sharks, rays, dogfish, etc.) that do shed their eggs into the water, each egg is enclosed in a large horny capsule conforming more to the shape of the future fish than to the comparatively big yolky egg within. The eggs of all species are very variable in size, color and number relative to the age of the females and the time of spawning, autumn spawners nearly always being more prolific. This is probably designed to offset the greater risks that face autumn-hatched young fish, and always the egg and larval mortality of every fish in the world is appallingly high. If it was not, then every patch of water on the earth's surface would be solid with fish!

The lowest form of breeding, method 1, is followed by a great many fish, especially those that live in shoals. The males and females come together at breeding-time, and then quite indiscriminately and without any semblance of individual mating, both sexes discharge their reproductive products into the water and move on. Only a fraction of the deposited eggs are in fact fertilized, and their subsequent fate is of no concern to the parent fish whatever. Their respective sex organs increase greatly in size as eggs or sperms multiply, and the response of such fish to the mating urge is simply to relieve the pressure by a haphazard discharge of their sex products. Only by the pre-

arranged proximity of the two sexes does nature arrange that reproduction will take place. The eggs themselves have no mobility, but the male sperms, or "milt" are highly active, swimming excitedly towards each egg, probably attracted by some chemical therein. Once fertilization has taken place, the egg wall immediately hardens and so prevents the possible entry of later sperms.

Some species, whilst still following this somewhat fortuitous method of reproduction, have developed some degree of courtship and mating behavior. Salmon and trout, for instance, have fairly elaborate courtship habits, an unmistakable pairing by two fish, preparation of the bottom for the eggs by the female (by trout, at least), and typical accompanying defense actions by the male. With trout especially, preliminary courtship and nesting preparations have often been mistakenly regarded as the spawning act proper, but in fact they are additional to it. The error often arises by the male trout or salmon's distinctive way of coming alongside his mate and quivering his body rapidly, which he does many times before the female is ready to deposit her eggs in the little pit she has nosed out of the bottom gravel. When she is finally ready, both fish lie side by side over the mouth of the pit, and the ova and milt are discharged into it simultaneously. This ensures a fair degree of fertilization in waters where the current may be strong. The semi-monogamous situation may break down when other nearby males rush in to add their milt, and in any case, after this brief pairing, the fish disperse, separate, and play no further part in the procreative business. With salmon there is less definite pairing, but a more complicated breeding cycle that builds up to the final spawning—and the subsequent death of the fish in the self-same stream-bed in which they were hatched long before.

With the second breeding method, in which the eggs are internally fertilized yet developed outside in the water, it sometimes happens that the mother fish's body is simply a convenient receptacle, or nest, in which the eggs remain whilst they are fertilized, and for a time until they are ready to hatch. Rockfish, for instance, actually "sit" on clusters of fertilized eggs until the young emerge, but these baby fish do not really develop inside their mother's body drawing nourishment from her; she merely protects them and clearly has no real interest in what she is doing! This method is rather uncommon with fish, and has in fact evolved in some cases into the third and final method.

Fish which produce that are both fertilized and hatch into young internally are all of the higher orders, notably the sharks and rays. Pairing takes place when the male fish grapples with his mate and introduces his milt into her body through modifications of his side-claspers. Skate are said to copulate in this manner for twenty minutes or so, and in all the cartilaginous species there is a definite mating act, followed in due course, by the ejection of completely formed baby fish from their mother's vent. The eggs of these species have no yolk, so the embryos derive

their nourishment direct from their mother's bloodstream, a process closely allied to the breeding habits of mammals which is strange in cold-blooded creatures like fish.

For the majority, however, reproduction is a chancy affair. Fertilization and survival into mature fish are the lot of only the lucky eggs, and only if the numbers of eggs laid are few, do the parent fish, however crudely and instinctively, provide some degree of care for their future offspring.

Off-Trail Bass Fishing

By RUSSELL TINSLEY

Don't bypass those small, insignificant-looking places. Often they teem with bass which have seldom seen a bait.

The narrow spit of dark water partly hidden by a stand of oak trees didn't impress me as a potential fishing hotspot. In fact, until now I could have cared less whether it held fish or not. But a cloudburst had played havoc with my favorite fishing river. It was running full, its waters a chocolate color. I was on my way home when I chanced to notice the jewel of mirrorlike water a few dozen feet off the road. On an impulse I decided to investigate.

Stopping my auto, I walked across to the water. It was a small stream that had been backed up with an earthen levee to make a waterhole for livestock. The placid surface was dimpled with swirls of feeding fish.

The fellow who owned the land with the waterhole lived only a short drive up the road. I quickly returned to my automobile and drove to his place. "Sure, go ahead and give her a try," he said after I asked to fish the stream. "My nephew did put a few small bass in the hole two summers back when he visited us. But to my knowledge no one has ever fished it."

I returned to the pool, hurriedly rigged my spinning tackle and removed a small yellow popper from the plastic box in my hip pocket and clipped it on the business end of my line. The waterhole actually was three small pools connected by a narrow channel, much like links of sausage. Creeping up on the hole stealthily to keep from spooking the fish, I lobbed my lure to the far bank. The concentric rings from the plug were still washing against the shore gently when suddenly the lure disappeared in a violent swirl. Luckily, the bass hooked itself in the strike, for my reactions never would have recovered in time.

The bass spurted down the pool. I held the pliant rod tip high, letting the fish tire itself out against the incessant strain. Shortly I eased it up on the grassy shore. It was a dark-backed largemouth bass, chunky and fat. About two pounds, I guessed.

The commotion undoubtedly had alarmed other fish in the tiny pool, but nevertheless I tried a few more casts before walking down to the next stop, a dishpan-shaped hole about thirty feet long. It was deep and still. Here I was greeted with an encore. The bass, a super-charged acrobat, was a twin to the first.

The third pool produced an eager yearling which I tossed back. After about fifteen minutes wait, I tried the three holes again and picked up another pair, both weighing about a pound apiece.

Now four bass is no bragging catch. But since I'd spent less than an hour on the stream it wasn't bad. Many pleasant memories I have of that little insignificant-looking stream. Of course, it had its limitations, mainly because of its diminutive size. But it always was good for a few bass and it was easily reached and easily fished.

After a few months I had most of the larger bass caught from the stream. I quit it for awhile where the remaining fish could spawn and rejuvenate the population. But it had served a useful purpose. I have an inherent curiosity. I got to thinking about that incident. Surely there were other bypassed bass waters, spots off the beaten path which beckoned with blue-ribbon fishing. I started looking.

My next golden discovery was a ten-acre natural lake nestled in a shallow valley. It was a beautiful spot, a neck-deep pool of dark vegetation-stained

water rimmed with hyacinths. A black-with-white-ribs chuggar fished along the lily pads late of an afternoon brought fast action.

I kept looking and found several similar places. The off-trail places weren't difficult to locate. In fact, there were more than I ever imagined. Wangling permission to fish them presented somewhat of a problem at times, however. Most were on private land. A majority of the landowners were cordial and gladly honored any requests to fish. Others remembered previous experiences they had with thoughtless sportsmen.

I've never encountered any of the so-called lunkers in these diminutive, out-of-the-way places nor do I expect to. My biggest fish was an ounce better than four pounds. Nonetheless, I've discovered some highly satisfying and challenging fishing. In many cases the bass actually are stunted because of overpopulated waters. I've tried to remedy such disconcerting situations.

Light spinning tackle is ideal for such fishing. My pet rig is a seven-foot rod, medium-action, and an open-face reel with six-pound-test monofilament. I've had two or three good bass get in the weeds and break off, but generally this outfit is more than adequate. A pound-size largemouth can give a good account of itself on this delicate tackle, and I can cast even the smallest of lures a great distance with the resilient tip. Sometimes a long, accurate cast is necessary, especially if I can't approach too close to a pool without scaring the fish.

Weedless lures or top-water baits usually are the best since the small pools are laced with vegetation. Your initial cast into a hole is all-important, so it doesn't pay to gamble with a conventional underwater lure fouling.

To my notion the nicest thing about this off-trail bass fishing is the environment. No longer must an angler joust with crowds to get at the choice fishing holes. He's got it all to himself. Most everyone ignores these insignificant-looking spots as they bustle toward the fishing places which happen to be in the news that particular day.

The average American angler is a conformist. He goes along with the majority, never taking the initiative. For example, a story can run in the local newspaper that the fish are hitting like mad on a particular lake that is popular with the populace. The next day that lake will be overrun with anglers. Or a story can appear stating that a certain artificial bait is catching lots of fish. It won't take sporting goods stores long to sell their available supply.

Few anglers I know go out of their way to learn anything new about fishing. They simply are content to let someone else blaze the way. That's the primary reason why I have most of these off-the-beaten-path spots to myself. No one wants to take the time or effort to discover new and challenging fishing places.

Most of these off-trail spots are easily fished. No elaborate boat or motor is needed. Fact is, most of them are too small for a boat anyway. A friend of mine carries a small two-man rubber boat in the trunk of his car and uses this to fish the larger spots. A majority of them, though, are fished from the bank. Many times the angler must approach on hands and knees to prevent the fish from spying his telltale silhouette.

Suppose you want to hunt some of these out-of-the-way fishing spots. There are several ways you can approach the problem. The best, naturally, is knowing the country where you live. I mentally remember each stream and lake I pass as I drive about my bailiwick. Later I check each one for fishing possibilities. Another way is to go to the county courthouse and get maps showing streams, lakes and rivers. Even artificial stock ponds sometimes are possibilities. This latter way has its advantages. Sometimes the likely spots are far away from public roads. That's why few fishermen ever discover them.

Many anglers don't realize that bass need not have big water to survive. Often a tiny, knee-deep pool will harbor a keeper or two. Fishing, like anything else, is where you find it. Don't accept the obvious. Look around. Perhaps there is one off-trail spot within a short drive of your home. Let's not allow it to go to waste.

—Florida Wildlife

"HOWDY," the Good Outdoor Manners Raccoon, Says

Good Fishing? Depends upon you
and your outdoor behavior!





CONSERVATION ACROSS THE NATION

Ripe Old Age

Here is a carp that almost reached the standard retirement age for people. It died at the age of 63.

Glen Wire who runs a farm near the Illinois border reports that a six-inch carp was put into his stock watering tank in 1895. In December the fish finally died. It had attained a length of 17.1 inches.

Conservation Department biologists examined the fish trying to verify its age. They were unable to do so. The cold well water pumped into the tank remained at about the same temperature throughout the year. The oldest wild carp ever found in Wisconsin was 24 years old.

—*Wisconsin Conservation Dept.*

Access Denied

An incomplete survey has revealed that anglers, hunters, and other outdoor recreationists are effectively barred from use of over a half-million acres of public lands in Oregon. When complete the study is expected to find that well over a million acres are involved.

Some 112 landowners are known to block large sections of the public domain. Most of the half-million acres already recognized are federal lands used for grazing.

Several reasons for the situation mentioned by Director Phil Schneider, state game director, are: poor conduct of recreational users toward private property; increased maintenance costs to landowners resulting from heavy use of private roads; and inadequate funds for proper development of public lands to accommodate public use.

—*Sport Fishing Institute "Bulletin"*

Repeat Treatment

Fishery biologists have restored good fishing to about one-third million acres of poor fishing waters in the United States by means of chemical rehabilitation.

Experience has shown that most rehabilitated lakes eventually become reinfested with undesirable fish that destroy fishing again, necessitating retreatment. Often, it is due to the carelessness of anglers dumping surplus live bait, or due to deliberate reintroductions by a thoughtless angler. The result is the same—good fishing destroyed and the need to retreat at considerable expense, usually measured in thousands of dollars.

—*Sport Fishing Institute "Bulletin"*

Trout Time

The accent on sport fishing makes it almost mandatory that trout hunters learn how to handle artificial lures. In Pennsylvania, for instance, there are numerous areas where only artificials may be used. In a new experimental stretch of stream, trout may be caught for sport only—since none may be kept.

A success in its first try last year, the new approach may be tried in other states.

Let's face it, trout are too expensive and too rough to raise to meet the demands of meat hunters.

—*"V. F. W. Magazine"*

Adult Recreation

According to the report of a recent Gallup Poll, sport fishing is clearly the leading form of outdoor recreation for men, with 44 per cent of men over 21 favoring it. Next in line is swimming 35 per cent, followed by hunting 28 per cent, dancing 27 per cent. Bowling, baseball or softball, golf, and eight other activities brought up the rear.

For women over 21, dancing is the most popular activity with 37 per cent participation, followed by swimming 30 per cent. Fishing is next in line with 21 per cent, then bowling 15 per cent, followed by badminton, hunting, golf and seven other "also rans."

Strangest of all, some 36 million adults indicated that they participated in none of these. Strange, too, was the omission of boating from the list, unquestionably some fraction of the remaining 36 million.

—*Des Moines "Sunday Register"*

Fishing Excuse Rather Than Reason

Fishing is often the excuse rather than the reason, for rods and reels and weekends away from home.

This is the consensus of the Johnson News Bureau which keeps tabs on fishermen from coast to coast.

Perhaps it's an excuse for a man to become a boy again—to lean back in the boat with a blue sky overhead and watch the white clouds build up into dream castles.

It is an excuse to shatter the bonds of civilization and renew acquaintanceship with God and nature; to watch a hawk wheel in the sky, and to drink in the other wonders of creation.

Maybe, it is an excuse to just get out of the house on a weekend when the lawn needs mowing or the garden weeded.

Such things are true because the attributes of fishing are much more important than a string of fish, or the actual catching of them. And, the man who recognizes this and uses fishing as an excuse rather than a reason is perhaps the one who derives the most from the sport.

—*Johnson News Bureau*

Davy Jones' Locker

By **DON SHINER**

The unsatisfying passion or lust of spoils by Davy Jones, the seafaring pirate who has claimed untold treasures for the seas, was brought forcefully to my attention one day last spring. It took place on Lake Leigh, a lake that was located in Sullivan County, in the original Rickett's Estate which now comprises one of Pennsylvania's most beautiful state parks, Ricketts Glen. Originally, prior to the park, the lake was, according to natives of that region, Colonel Rickett's favorite trout pond.

A huge cement breastwork empounded perhaps 75 or more acres of water, stump filled water that is. The cement structure was decaying with age and to prevent a flood of catastrophic proportions gushing down Kitchen Creek and into the Huntington lowlands, the level of the lake was lowered greatly some years back. Yet a broad expansive pool stood immediately in front of the cement breast and beyond, the water narrowed down to creek size, with a small stream winding its way through a meadow of swamp grass and old, gnarled stumps.

This lake was in relatively deep wilderness, typical terrain which comprises this northern county. I visited the lake many autumns during the duck hunting seasons. Wildlife was abundant there: deer came in large number to the lake to drink and graze in the lush grass; bear tracks were visible in the soft earth; woodcocks probed for worms in the soft mud in the bogs; red-wing black birds' melodious song rang through the stillness; an occasional bald eagle swooped low over the lake in search of sitting ducks.

I heard the rumor that this was trout water. I always intended to fish there for trout, at least I promised myself that as I nestled in a duck blind in the autumn, but each spring passed without my doing so. Then a year ago, I went there to survey the duck situation and it being the last day of the trout season, I was surprised to find two fishermen angling from a boat which they had carried to the site. Each had a brace of brook trout, the likes of which I never saw before in Pennsylvania. Brooks 18 inches in length, of unbelievable beauty, dangled from their stringers. I vowed that I'd be back in the spring armed with my rod and some streamer flies. But the chance never came.

The big ice break up that spring battered a huge hole in the decaying dam, pouring millions of gallons of water down the side of the Red Rock Mountain. And the big brook trout went with the water. When I arrived, all the water was gone. Only a soft black

mud and an intricate network of stumps remained. A trickle of tiny creek wound a crooked path down through the meadow, but it was far too shallow for fish. The trout had gone the route of the water and probably were lodged in the restricted region of Kitchen Creek Glen.

The first few casts in the shallow creek showed fur-



THE CEMENT breast empounded roughly 75 acres of shallow stump filled water. This was brook trout water, with brooks up to 18 inches in length being caught.



THE ICE jam in the spring rammed several huge holes in the crumbling cement. Millions of tons of water spilled through and poured into Kitchen Creek.



THIS WAS the scene that confronted me as I returned that spring to Lake Leigh. Black mud, gnarled roots and stumps and a tiny creek remained where the tannic acid colored water had been.

ther fishing was fruitless. So I folded gear and decided to go elsewhere for the day's fishing. As I did so, I noticed a thin strand of line drooping across the twisted roots of an old stump. Following the line, more out of curiosity, I found a fishing lure, of the bass plug variety, hooked to wood. The hooks were rusty, but the plastic body was intact.

Looking farther I was amazed at the amount of fishing tackle scattered about on the ground which, prior to this incident, was the lake bottom.

Bits of line hung from practically every stump. Seemingly miles of other line, of the monofilament variety used in spinning, was strung across the earth and wrapped around the gnarled roots. Practically every piece of line led to a sinker and one or two rusty hooks, or a plug or a rusty spoon. Indeed there seemed to be no end to the gear and to the variety of fishing items strewn about on the dry pond bottom. There were sinkers of every known make and type, the total of which would have easily gone over several



THIS HANDFUL of assorted tackle was picked in a few minutes. Thousands remained.

hundred pounds! There were small spinning size spoons, up to and including some of musky size, hanging fast to the stumps. All were rusty, beyond the stage of salvaging except for the few that were perhaps lost that previous fall. There were bass plugs, from the small spinning size to the big $\frac{3}{8}$ -oz. surface variety commonly used for largemouth bass. I think one could have filled a pick-up truck with the tackle. Bobbers, hip boot, old shoes, quantities of rusty tin cans and bait cans, rusty camp stove, remnants of a lantern, several fishing reels, rusty knives and the exterior metal case of what looked like a folding type camera. There were several rusty outer shells of thermos bottles, remnants of an old-fashioned scrub-board for washing clothes which some fisherman must have carried there, else what other explanation is there?

In the few minutes that I glanced about over a small portion of the dry lake bed, I was astonished at the fantastic quantity of material strewn about on the ground. And there were boot tracks in the soft mud of two or three people who had obviously made the rounds earlier and had no doubt gathered and salvaged quantities of fishing gear. I left the items intact on the stumps and in the mud, except for a few for a photograph on the spot.

I recall reading about the quantities of material, both fishing and otherwise, that have been found on the bottoms of lakes which have either been dried up because of a severe drought or drained for improvement purposes. Such articles as outboard motors, tackle boxes, rods, beach umbrellas, metal outdoor furniture of the folding variety, and a hundred and one other articles were usually among those found. None of these were in the locker of Lake Leigh, but then again, I didn't search long or hard amid the bottom jungle.

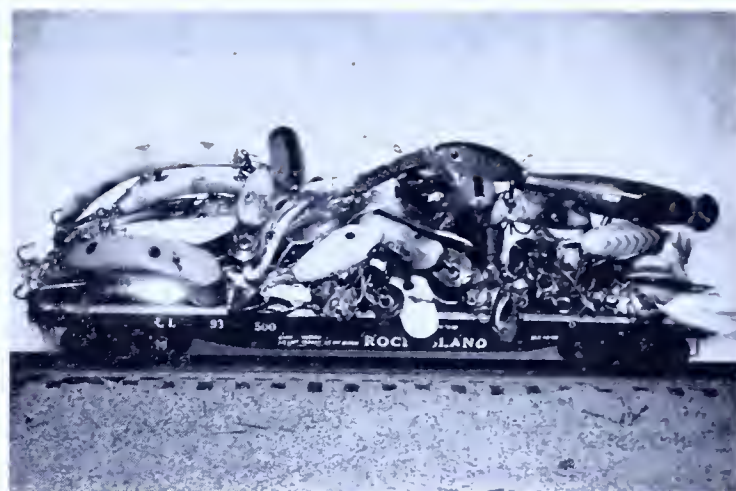
From this you can gather that I advocate other fishermen visiting lakes and ponds that happen to dry up in their region. You will find fantastic quantities of articles there. And you can learn a lot about the "other" fishermen. In Lake Leigh, in which only trout and perhaps a few catfish were present, there were big bass plugs and musky size spoons. These fishermen were either optimistic or simply exploring the wilderness pond to learn what possible fish were really present.

Consider this but one lake in the commonwealth. Multiply the amount of tackle found here, with the number of lakes in the state. The amount of fishing gear that is lost throughout the state in a single year must be a staggering figure. In spite of all that is purchased, no one person accumulates very much because of the loss of a good portion of the material over a span of a few years.

Could it be also that fish seem to grow wary of certain lures simply because they have an opportunity to investigate at close range, quantities of the same type which clog the underwater scene? While this is doubtful, nevertheless, the lost lures are there for their close scrutiny.

The future of Lake Leigh is surrounded in uncertainty. The lake will probably never be repaired because of the great cost of rebuilding a completely new breastwork and for a questionable useful (?) purpose thereafter. With time, the remaining cement wall will crumble; the unusually rich soil of the former lake bottom will quickly grow into grasses and trees and become but a part of the surrounding forest. The region will return much to its former self. However, for a split second of time, it revealed the character and nature and the amount of fishermen to venture forth on so-called wilderness water, away from the beaten path. Certainly I would not have guessed the number of fishermen visiting this water which was impounded for lumbering purposes for perhaps the length of half a century or little more.

The ice cakes which battered the breast and released the remaining lake water uncovered a portion of Davy Jones' locker of treasure. This hidden chest contained mostly fishing tackle, but it serves to show this Jones' lust and unsatisfiable thirst for treasure of all sorts.



ACTUALLY a railroad car of fishing tackle is lost each year in the waters of Pennsylvania. Davy Jones' thirst for treasure is unquenchable. Don't you add unnecessarily to his locker.

Now be careful from here on out that you don't add to this needless treasure chest of his, or at least keep your tackle losses to a minimum!

Enforcement Pays Off

Intensified enforcement of motorboat laws on Conneaut Lake this year demonstrates pointedly that reckless and irresponsible operation of water craft can be minimized by effective supervision. More vigorous and persistent patrolling unquestionably has been a major factor in preventing serious boating accidents.

This season's safety record is a startling contrast to last year's when motorboats were involved in two deaths and a number of serious accidents. Education on the need for greater care and more consideration of the rights of others probably has influenced many boaters to refrain from clowning and water hot-rod antics. But these lessons in safety too often are lost unless the law is enforced as a stark reminder that reckless boating is unprofitable. Arrest and fines frequently make more impression on the confirmed water jockeys than appeal to reason.

The results of the Fish Commission's enforcement program this year are most gratifying. The improvement in boat operations on the crowded lake, attesting to the determination and vigilance of its officers, calls for continued enforcement throughout the remainder of the current season.

More detailed motorboat laws, tailored to control the growing number of boating enthusiasts on all Pennsylvania waterways, now are before the State Legislature. In addition to establishing a numbering license system, they also would set up a special water safety division of the Fish Commission for law enforcement. The success of stepped-up enforcement on Conneaut Lake this year recommends enactment of the measure so that the benefits of supervision may be extended to all waterways.

—Meadville Tribune, July 25, 1959

Try Fly-Fishing

Dyed-in-the-wool fly-fishermen are convinced there's no other way to catch fish. Maybe they're right. At least it's worth considering their viewpoint.

Despite what some people think, fly angling's not difficult to master and a little practice and some advice from a local expert can lift any fisherman out of the novice class—and may even make him a convert.

Selecting the right equipment is the first step in joining the fly-fishing fraternity. Rod, reel, and line must be matched for proper balance. Seek advice on the best kind of rod and reel, then try out different weight of line until you find one that has the proper feel. Be discriminate in your choice of flies. A few basic patterns that have been proven in local waters are all you'll need.

You'll find most experienced hands with a fly rod willing to offer free instruction in flycasting techniques. A few afternoons of dry-land casting under his watchful eye and you should be ready to give it a try on the water. Don't rush it, however. Spend a while watching your instructor in action. Notice what stretch of stream he fishes. Watch his casting and striking technique. Make a few mental notes and you'll be way ahead when the big moment arrives.

Even then don't be discouraged if your first casts are strictly amateurish. After all, the "pros" in this business had the same problems. Before too long you'll probably find yourself flicking that fish-tantalizing fly right where you want it more times than not.

And, chances are, you'll catch more fish than ever before. Just ask any fly-fisherman.

Mercury Outboard Company

"Flood Waters—Today—Yesterday"

By **L. E. STOTZ**
U. S. FOREST RANGER

January, 1959, will be long remembered in many Pennsylvania urban and rural communities for the fury with which ice-choked flood waters swept down upon them. In the "Monday morning quarterbacking" that often follows such a disaster there can be considerable loose talk about the origin of floods and how to prevent them in the future. Some people might even go so far as to claim that if we still had our original forest—the virgin woodland that the early pioneers found when they broke through the western ramparts of the Alleghenies—there would be no serious floods.

It would be well if such people could go back to January 9, 1762, and look in on Fort Pitt—the "dirt fort" built to guard a wilderness empire. They would find British soldiers frantically barricading the heavy doors to the powder magazine in a futile attempt to save the precious gun powder from the swirling flood waters of the Allegheny and Monongahela Rivers. They would see the silt laden water rise to soak the vats of salted meat stored in the casements of the fort, and the parade ground covered with more than four feet of water. Finally, they would witness the withdrawal of part of the garrison, and what provisions they could save, as they rowed the heavily laden batteaus to a safe landing on higher ground. They would realize that the only thing that saved Fort Pitt from total destruction was the brick facing that deflected the main force of the rushing waters.

If they could return a year later, in March, 1763, to see how the Fort on the Point was faring they would be just in time to experience a second and more serious flood—a flood that reached a crest 22 inches higher than the one of the previous year. After these twin disasters, they might realize why Fort Pitt was never to be completely built according to its original design.

Why did a river like the Allegheny go on a rampage in 1762 when its watershed was fully clothed with a fine forest of pine, hemlock and hardwoods—a forest that had not yet been slashed and burned?

There is no record of the depth of snow in the forest at that time, nor any information on how much rain fell to cause rapid snow melt, but a situation must have developed similar to that which occurred in January, 1959. Once the soil became fully saturated, and could store no more water, additional moisture had no place to go but overland into the stream channels. If the rain kept up long enough, before freezing temperatures returned, flood conditions re-

sulted. We know that it had been a long time since floods, such as those of 1762 and 1763, engulfed Fort Pitt. The oldest Indian lounging around this wilderness fort could remember no such floods, even in his youth.

Although a forested watershed cannot prevent all floods, it can and does prevent some, and can greatly lessen the impact of most of them. The better condition of the forest cover the more water will be absorbed by the soil to return slowly through underground channels and maintain normal stream flow.

Tests made in a hardwood forest in the Ohio Valley showed that this humus laden soil absorbed 14 times more water per minute, at a depth of three inches, than the soil in an adjacent open field.

Open fields—especially those trampled by too many livestock—are apt to freeze in winter while the soil under a good forest cover remains unfrozen beneath the snow. This important fact reduces the capacity of the fields to absorb water when a warm rain strikes a heavy accumulation of snow. The resultant heavy run-off into stream channels is a big factor in creating flood conditions.

Another important role that forests play in lessening flood damage is to reduce the load of debris carried by streams during high water. Eliminate this healthy forest cover and flood waters will be even higher, more destructive and will carry a heavier silt burden to be dumped into homes and factories down stream.

Nearly two centuries have passed since the floods of 1762 and 1763. The wilderness has given way to cities, towns, huge industrial plants and farms along the historic Allegheny River. Today, in the Space Age, the ravages of periodic floods can no longer be tolerated. While there is no simple solution to the flood problem, it is not a hopeless one.

In the nearly two centuries since the twin floods of 1762 and 1763, our watersheds have suffered greatly because a young, vigorous nation was trying to push nature around and it had the audacity to think that it could get away with it.

These deteriorated watersheds can be brought back, and the rampaging rivers can be tamed, but only if we are willing to pay the price. Good land management, practiced from the headwaters to the mouth of every stream, and the necessary engineering structures to trap peak run-offs, will do much to remove the threat of periodic floods.

Skill and Tradition

By LARRY SUTTON

Some American traditions will stand as long as America does! It would be hard to imagine Thanksgiving Day without turkey, movies without popcorn, or worse yet, the absence of the time-honored coffee break!

Some other traditions, however, must recognize an accumulation of technical knowledge, skills in various fields and action programs designed to best serve the interests of the public as a whole.

Wildlife management is being recognized as a highly technical, complex and little understood field of science. It brings into play many different, yet interrelated fields of scientific know-how: No group or individual who is not thoroughly familiar with these processes can be expected to make sound recommendations on wildlife management policies. These policies must be based on an aggregate of accumulated scientific data.

Such items as the following are familiar in our local newspapers: "Local Rod and Gun Club Submits Hunting and Fishing Recommendations to Commission." It has been and still is traditional of people charged with the responsibility of wildlife management not only to accept but to invite such recommendations from various local organizations. These recommendations may come from local sportsman's clubs, outfitter's organizations, the Farm Bureau, service clubs, local unions, or any other group whose members are interested in hunting and fishing. This is only right and

proper, for game and fish managers are public servants. But with the variety of opinions that can be expected from so many varied groups, it is inconceivable that they would even be in general agreement. Much less, is it to be expected that they are always based on sound management principles.

Because many factors are so varied and because of the difficulty of gathering much information about the various wildlife and their habitat, several kinds of technically trained personnel are required to do this job. This is a different approach to wildlife management, and it is looked upon with suspicion by those who base management on tradition. A bird biologist may have to defend his findings under ridicule of others and a fish technician may be considered incompetent by some because he has never worked on pollution control activities. Technical recommendations are viewed with suspicion if they do not agree with local opinion or public sentiment.

Let us look upon the abundant wildlife of our state not as a good thing to be exploited while it lasts, but as a renewable natural resource which through proper management can be maintained on a sustained yield basis. Scientific studies and analyses are a necessary part of this management program.

Let's lay tradition aside to the extent that available technical knowledge and skill can be put to the best possible use.

—Wyoming Wildlife



The Stone Bridge

PENNSYLVANIA Angler



October 1959

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Editorial...

Age of Space

Comic strips, kids' toys, newspaper headlines, magazine articles, Moscow, Washington, and Cape Canaveral remind us daily that this is the age of space; outer space.

Lest our concern be over-concentrated on things interplanetary, however, we must at all times be aware of the fact that this is also the age of inner space.

Reminders of this we also have with us daily—crowded camp sites, noisy lakes, busy trout streams, jam-packed beaches, increasing demands for pieces of the public domain.

These are conservation concerns, certainly. And thus space takes its place with land, water, fish, and game as a resource to be managed and used, wisely.

Management of space and use of space pose big problems.

Is it a renewable resource like game and fish? Obviously it is not. It never expands; only shrinks. This has been true since Etienne Brule led the way of the white man to Michigan in 1618; two years before the Pilgrims stepped on Plymouth Rock. And each new baby, each new car, house trailer, tent, outboard motor and new pair of water skis add their emphasis to the fact.

How space is to be managed and used takes some heavy thinking right now. New laws and new regulations—all kinds of them, probably—are in the offing. There will be new looks in old zoning codes. Chances are these will be to the satisfaction of the public, but as always, not to the satisfaction of individuals.

More rigid time limits may be placed on camping. Use of public game areas, fishing sites, forests, beaches may come in for new restrictions. The whole problem of Great Lakes shorelines and the public and private rights involved is due for weighty thought. Inland lakes and trout streams will need new controls.

The public domain will shrink by a demand from more and more people who have a right to use it. It will face additional squeezes from those who would buy it, if they could.

Yes, conservation has a new resource to manage; a brand new job at hand, in the age of space.

—Michigan Conservation

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THE COVER—Driftwood in Silhouette
Photo by Johnny Nicklas

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Trolling for Walleyes

By **DON SHINER**



1

Bass and trout are talked about regularly in print. Pickerel and pan fish run a close third and fourth. But the one fish that is sadly neglected, and rightfully should be placed somewhere near the top of the list, is the walleye.

This is a wonderful fish found rather abundantly throughout Pennsylvania's rivers and major lakes. Next in size to musky and northern pike, the walleye is a really large fish, reaching upward to (world's record) 22 pounds! Certainly a fish of this stature should receive more than an occasional raised eyebrow from the majority of anglers. And when considering fine eating, nothing, simply nothing swimming in fresh water, matches the fine, delightful flavor of the walleye.

Here is a quick run down on facts about the walleye, or pike-perch as it is sometimes called. The walleye is a member of the perch family. It is distributed along the Atlantic coast from North Carolina northward to the Hudson Bay and west to the Alleghenies, including Alabama and Tennessee River drainages. Pennsylvania has a good portion of these fish.

It spawns in early spring, on rocky, gravelly portions. Its food consists of small fish and crayfish, feeding continuously throughout the year, winter included. Like the yellow perch, the walleye roams in schools, and prefers deep water during the daylight hours. Its color ranges from a mottled olive to greenish brown over back and sides, with white beneath. The outstanding characteristic is the walleye's eye which appears to be clouded over or milky, but glows bright green in the rays of light at night.

That was a quick get-acquainted resume of this fine fish. Catching it is a wonderful sport, but is a different story. Suppose I let the following facts and photographs serve as a primer on walleye fishing. Study the statements carefully, then seek out this marauder of the deep, and learn firsthand knowledge of this fine game fish.

(1) Trolling for walleyes pays off during the daylight hours. Search for deep channels in a river or deep pockets in a lake. These are disclosed by the contour of the surrounding shoreline. Troll slowly in a zig-zag course to cover as much of the area as possible. All this means a boat and motor are good aids in this walleye field. Tune the motor to ensure it running smoothly at low speed. Cut down on mixture of oil with gasoline to prevent fouling plugs.



2

(2) Trolling tackle need not be elaborate. Ordinary fishing gear will do nicely. A casting rod or a spinning outfit, of medium action, are fine. Some trollers use a handline, holding it tightly in their fingers as they row their boat. The operation or motion of rowing gives the lure a stop and go, fluttering action, highly enticing to walleyes. In all cases keep a close contact with the lure so it is disclosed when the lure has

picked up weeds and constantly bumps along the bottom where it should be at all times.



(3) Popular trolling lure is a June bug type spinner and a large worm or minnow. Deep-running plugs and spoons are also fine trolling lures. Lure must be trolled slowly and close to bottom. Walleyes will rarely strike at a speeding lure or rise any great height to intercept a passing bait.



(4) The lure is rigged in this manner. A three-way swivel is employed two feet or so in front of the lure. To this an 18-inch dropper line, of lighter test, is tied. Sinker carries lure to bottom and can be felt bumping over rocks when trolled properly. Should sinker become fouled on an underwater log, the lighter test line will break first, preventing loss of lure. Illustration shows an "Indian Joe" spinner. This lure is manufactured by a little firm in Pennsylvania and was designed specifically for walleyes in the Wallenpau-pack region. A worm or pork rind is bent to the tandem hooks. The blade is so constructed that both blade and worm spin freely giving the appearance of a minnow in the water.

(5) Rod holders are available for those who prefer to relax freely while trolling. Rods can be set safely on these holders and the impact of a walleye grabbing lure will not pull gear overboard. Various types of holders are available.

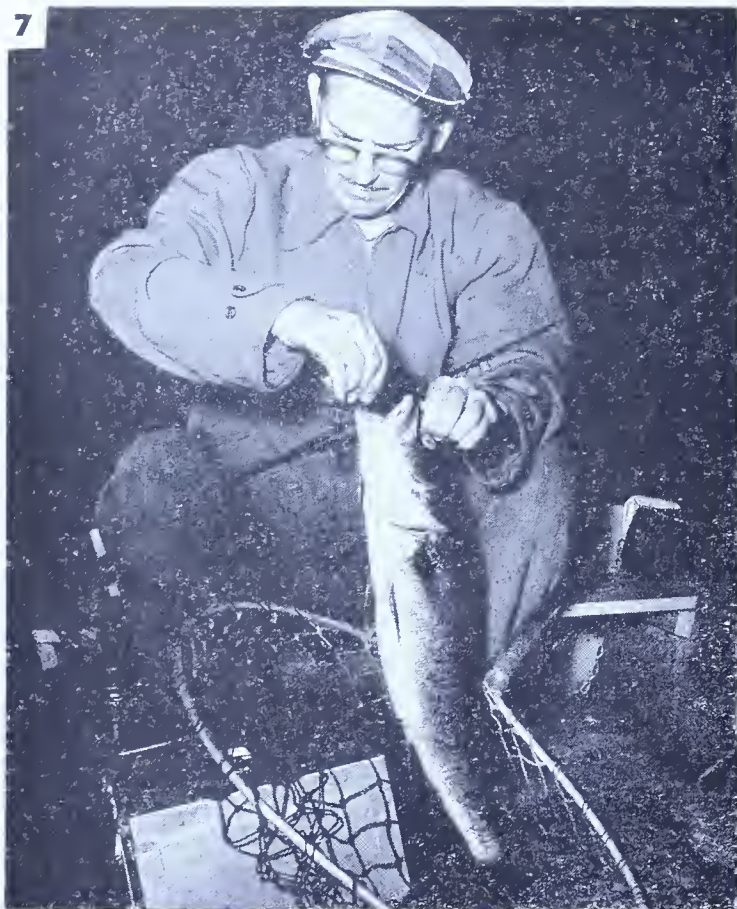


(6) Best time of day to troll is early morning and from four o'clock in the afternoon until sunset. Best time of year for walleyes is autumn after the first hard frost. Frequently on overcast days walleyes will continue to bite throughout day. A good guide is to observe other boats in the region. If they appear to be motoring slowly in the deep channels, chances are they are probing the depths for walleyes. You should then try, too.

(7) When a lunker-size walleye hits the lure, you will not mistake it for the sinker or lure fouling on bottom. There is a strong throbbing on the rod tip as the fish pulls to return to the depths and the school. Cut the motor and battle the fish. A boat net will help land it. Handle fish with respect, for the jaw is packed with sharp teeth which can inflict painful cuts when you attempt to unhook the lure.

(8) After tying into a walleye, throw an anchored line, bottle or block of wood overboard. This will mark the location. Walleyes travel in schools and

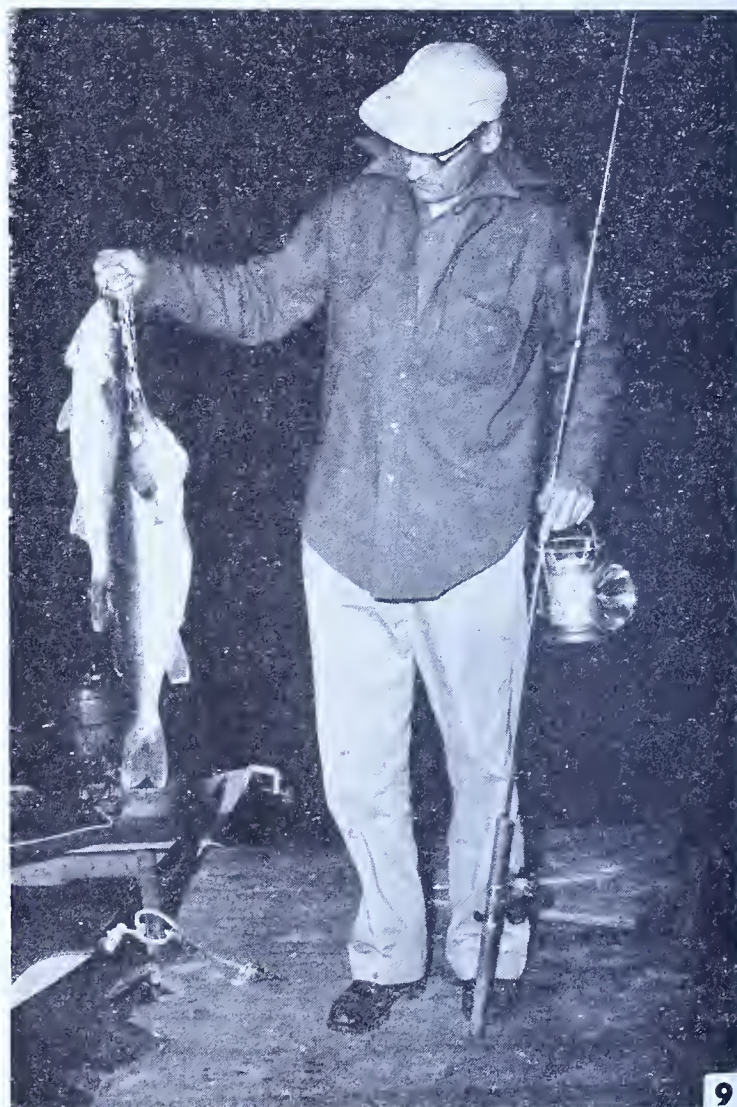
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where one is found there are others. The school will move, but as a rule you will be able to pick up another, possibly two or three more fish, before it moves very far. The walleyes may not be there during the next day, but it is an excellent plan to try there again a few days later. They have regular routes of travel and will return periodically to the same location.

(9) As the sun dips below the horizon and darkness sets in, change from trolling to casting. Use sinking type plugs or spoons. Cast in shallow water near rocky ledges and sand bars. Here walleyes come to gather minnows. A plug or spoon tossed into their midst will bring action. Many anglers prefer this sundown method, claiming there is more action. Red and white hires, light green, shad or perch finished plugs are good colors to use.

8



9

Localized Sportsman's Guide

"Hunting and Fishing in Warren County, Pennsylvania," is the title of an attractive folder prepared by the Warren Area, Chamber of Commerce, and now available for the asking.

Brimful of information for the fisherman and hunter, the folder lists some fifty places where accommodations can be had at reasonable rates throughout the Warren County area. A complete list and address of

the agents selling licenses, hotels, motels, restaurants and private homes.

Included in the folder is a map of the area revealing the location of fishing streams, bass and trout and hunting areas both small and big game.

A postcard to the Warren Area Chamber of Commerce, Warren, Pa., will bring you a copy of the folder, free of charge.

A Step Forward ... To Better Fishing

By JOSEPH CEHOVIN

Photos by: Russ Johnson

THE LOWER limit area No. 3 at Camp Jazz, one of five stretches, each 500 feet long, on the South Branch of Kinzua Creek in the Allegheny National Forest, wherein a portion of the stream's quota of trout are planted and fishing prohibited in line with the experiment.



Since the beginning of time, man has cast his nets and baited hooks into the waters, always anticipating that a full catch would reward his efforts. Sometimes his hopes were realized, sometimes not. This has always been the way of all fishermen. The sport fisherman of today still sallies forth, with the same optimism, but burdened with all manner of gadgets, gimmicks and gear in his quest.

However, whether for the purpose of making a livelihood or just for the sport, there must be a place to go fishin', the time to go, and of course . . . a reasonable abundance of fish.

We in America have been blessed at different times and in varying degrees with all these things and "goin' fishin'" was taken for granted . . . "like the sun in the mornin' and the moon at night." But then one day flies in the ointment were discovered.

As our population began to pyramid and the numbers of anglers became legion, Mother Nature could not produce enough fish to keep everybody happy. With the exception of man-made impoundments, fish habitat remained almost constant. Natural production, limited by a semi-fixed habitat and the destruction of many streams by pollution and other causes, could not fill the gap. From this was developed the idea of "put and take" fishing.

Fish hatcheries bloomed to give Mother Nature an assist. Millions upon millions of hatchery fish were

stocked to fill the ever increasing need and to answer the familiar question, "Where's the Fish?"

And yet, after several days following stocking there were still many anglers who returned from the creek muttering, "There ain't no fish." The blame for this state of affairs shotgunned. Fish Commission, sportsmen's clubs, fish truck followers, mysterious fish kills, pollution, big brown trout, the weather, time of day, phases of the moon and tide and so on, all have been the targets.

Suggested remedies for this situation flew thick and fast. Countless exhaustive studies were made and many ideas tried out, all seemingly to little avail.

Then, on May 23, 1959, an experiment in fish stocking, unique in the annals of Pennsylvania sport fishing, was initiated on the South Branch of the Kinzua Creek in the Allegheny National Forest. Perhaps it is a part of the answer to more and better fishing. Perhaps not. But if it does prove itself, it may become a fixture on a great many of our approved trout streams. It's still early in the game for any conclusive findings, though it seems to be working.

The experiment consists of five, wired-in stocking areas, roughly 500 feet long and approximately a mile apart, on the fabled stream that meanders north from Kane, along Route 68 and eventually flows into the picturesque Allegheny River at Kinzua. Though given wide publicity, a great many anglers still are unaware

of these "enclosures" or their purpose. How these areas came about is a rather long, but memorable story. They are an example of what can be accomplished when everyone cooperates.

It all started through the efforts of Joe Boccardi, fishery management biologist for the U. S. Fish and Wildlife Service, operating out of "A.N.F." headquarters at Warren, Pa. Several months of planning, study and considerable leg work went into this venture. The Pennsylvania Fish Commission was consulted and agreed to cooperate. The Kane Fish and Game Club offered to donate the necessary wire and do the work. Happily, expenditures were kept to a minimum when the Pennsylvania Game Commission stepped into the picture and donated some old, discarded gamelands wire. Everybody was getting into the act.

Finally, Kane Fish and Game Club members, headed by James McCullough, Sr., fish committee chairman, formed an all-day work bee to string the wire and the experiment was formally under way with Joe Boccardi directing.

Twenty-five miles away, a fish truck rumbled out of the Allegheny Fish Cultural Station at Cherry Grove, destined for the new stocking areas. The fish truck followers experienced a shock on that run. On its



CHARLES RUSSO of the Kane Fish and Game Club awaiting a bucket of trout being filled by **Homer Zumpstein**, USF&W Service hatchery employee, and about to be planted in one of the new stocking enclosures.

arrival, 1,500 good sized trout went under the wire to play their part in the "great experiment."

To ensure that there shall be "no fishing," these areas are posted with Pennsylvania Fish Commission signs proclaiming them "nursery waters." A fine of \$100 would be visited upon anyone caught fishing therein, giving "teeth" to the "no fishing" edict and putting an end to the "raids" of the fish truck following fraternity.



IN THEY GO. The honors for this kettle of fish are being done by **Joe Boccardi**, USF&W fishery management biologist, stationed at the National Forest headquarters in Warren.

According to studies undertaken during the several years that Joe Boccardi has been stationed here, it was estimated that the latter accounted for approximately 40 per cent of the trout in the initial few hours following planting. Quite obviously this left relatively few fish and little sport for later angling.

With this one big factor eliminated, there was still the other 60 per cent to be accounted for. It was theorized that the fish would now have time to move out and become acclimated to their new surroundings. Now one more big question remained. "Would the trout survive in sufficient numbers to justify closing parts of the stream for stocking?" To facilitate future population surveys, the trout were marked by clipping a pelvic fin.

Unfortunately, a lack of sufficient funds to permit a good creel census hampered that phase of the operations. The only tests conducted to date were a visual check several weeks following the initial planting and an "electro-fishing" survey on July 15-17, inclusive.

Following are the counts taken within the various areas which should dispel for all time the complaint, "There ain't no fish in the creek."

Area No. 1 (Watermill)

- 23 brown trout—2nd inseason plant
- 14 brown trout—1st inseason plant
- 9 rainbow trout—2nd inseason plant
- 3 rainbow trout—1st inseason plant
- 9 native brown trout

Area No. 2 (below confluence of Hubert Run)

- 21 brown trout—2nd inseason plant
- 8 brown trout—1st inseason plant
- 2 rainbow trout—2nd inseason plant
- 1 brook trout—2nd inseason plant
- 23 native brown trout
- 1 native brook trout

Area No. 3 (Camp Jazz)

- 22 brown trout—2nd inseason plant
- 6 brown trout—1st inseason plant
- 8 native brown trout

Area No. 4 (approx. 1 mile below No. 3)

21 brown trout—2nd plant
7 brown trout—1st plant
17 brown trout—plant unknown
7 native brown trout

Area No. 5 (½ mile above Bliss Hill Road)

22 brown trout—2nd inseason plant
5 brown trout—1st inseason plant
6 rainbow trout—1st inseason plant
2 rainbow trout—2nd inseason plant
2 brook trout—1st inseason plant
20 native brown trout

The tests from which the above figures were compiled were estimated to be only 40 per cent effective due to the wide area within the wired stream sections. In addition, the areas between the wires were given limited shock tests which turned up both native and stocked trout that are available to the angler. Though not as numerous as within the enclosures, they are present in sufficient numbers to assure good sport, even for the more critical fisherman. Does that answer someone's question?

Another interesting development, not shown in these figures, was the notable absence of rough fish in any noticeable numbers. Did they become the

main course in some trout's diet or were they chased out? The answer is not known but would certainly be a big help on other streams afflicted with large rough fish populations as was the case of the Kinzua.

Another item not mentioned was the large size of the native brown trout that were turned up, that whetted the "fishin' fever" of the Chief Aquatic Biologist of the "PFC," Gordon Trembley, who assisted in the tests. He's expected back to try his luck.

That's it for project No. 1. Project No. 2 is now in the planning stages and is slated for Two Mile Run, another "ANF" stream. The same agencies will co-operate on this one except that this time the wires will be strung up by the Ludlow Sportsmen's Club since the stream flows through their bailiwick on its way to Sheffield and the famed "Tionesta."

Whatever may be your conclusion, whatever your criticisms, it seems to be a step in the right direction. If it accomplishes nothing else it will still be noteworthy for the amount of praise heaped on this project. This praise can best be summed up in the words of Ray Maze of Kane, an ardent Kinzua fan, "It's the best thing that ever happened to the Kinzua."

"We like it."

Is Your Farm Pond Muddy?

Farm pond and small lake owners troubled by persistent muddiness of their water can find the answer to the problem in finely ground agricultural gypsum. An article by Robert F. Barie in the Journal of Soil and Water Conservation disclosed that tests with the substance by the Universities of Missouri and Kentucky showed it to be quite effective.

This clearing action is caused by the flocculating effect of the gypsum on the suspended clay particles in the water. The gypsum is applied by scattering it from a boat so that most of the surface receives some gypsum. Spreading may also be done from the shore on smaller ponds.

The amount of gypsum varies according to the depth of the pond and the degree of turbidity. Best results have been achieved when applied at the rate of 12 lbs. per 1,000 cubic feet of water. A one-acre pond, the average depth of which is four feet, would therefore require approximately one ton of the material in extreme cases of muddiness. Other tests in Oklahoma showed that as little as 150 pounds per acre cleared lesser degrees of muddiness in about two days.

Under normal conditions, the treatment will remain effective for considerable periods of time. The gypsum has no undesirable effect on the water if used for drinking purposes, and it will not adversely affect plant or animal life.

Robert Bielo, southeast regional fishery manager of the Pennsylvania Fish Commission, observed that it might be well to go one step further and correct the cause or causes of the muddiness. Improved land use practices on the watershed of the pond would minimize and possibly eliminate the problem entirely.

Another cause may be in the pond itself. If carp are present, their constant grubbing for food and stirring bottom mud will contribute to the condition. Getting rid of them by chemical treatment under the direction of a qualified and authorized aquatic biologist, or by draining the pond are the recommended procedures.

Unfenced cattle will not only muddy the water as they wade in to drink, but they cut the bank. The earth thus exposed causes muddiness as a result of the small wave action that will accompany even a light breeze.

Kennedy Named to Division Staff

Joseph S. Kennedy, a native of Scranton, Pa., joined the staff of the Conservation Education Division of the Fish Commission on September 1, in the capacity of information writer.

His addition will see an extension of the Commission's information service to a local level. In addition to the preparation of releases of localized interest, Kennedy will assist in the publication of the ANGLER and other Commission publications and education media.

Prior to his new appointment, he was engaged in similar work in the administrative office of the Pennsylvania Department of Agriculture.

He is 24 years old, single, and a graduate of Scranton's Central High School. He later attended American University in Washington, D. C., graduating in 1957 with a Bachelor of Arts degree. He subsequently did graduate work at Pennsylvania State University.



ANGLER QUIZ

By Carsten Ahrens

Your Neighbors While Fishing

Mammals an Angler May Meet

"A mammal is any animal that provides milk for its young"

A. Raccoon

B. Muskrat

C. Beaver

D. Mink

E. Opossum

F. Porcupine

G. Flying Squirrel

H. Snowshoe Hare

I. Eastern Cottontail

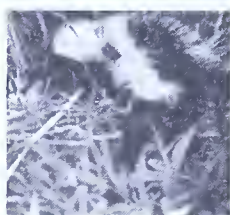
J. Skunk



Raccoon



Flying Squirrel



Skunk

1. Herbivorous mammal able to take care of itself almost from birth. It has seasonal color phases.
2. Semi-aboreal, nocturnal, pouched mammal with a prehensile tail. It makes some scientists believe the Americas were once joined to Australia by a land bridge.
3. Aquatic rodent with a broad spatulate tail; once extinct in Pennsylvania.
4. Carnivorous mammal with a small head and black and white hair. It is known in Europe (and elsewhere) as a "polecat."
5. Herbivorous mammal, helpless, blind, dependent for two weeks after birth. It undergoes no pronounced seasonal color changes.
6. Carnivorous mammal, related to bears and pandas; wears a black mask and rings on its tail.
7. Semi-aquatic, carnivorous animal, uniformly dark brown with whitish chin; long, thin, fond of fish.
8. Body protected by fur, hair, barbed quills; has usually a single offspring; loves salt.
9. Nocturnal mammal; loose fold of skin from wrist to hind foot; dark above, light below.
10. Herbivorous rodent with a long, hairless, flat tail; webbed hind feet; found over much of Canada and the United States.

ANSWERS

H-1; E-2; C-3; J-4; I-5; A-6; D-7; F-8; G-9; B-10.

"Muskellunge Fishing in Presque Isle Bay"

By **EDWARD D. MENTZ**

It is said, the muskellunge rivals the barracuda of salt water, making the same fierce rushes and having a similarly large mouth set with dangerous teeth, and a superficial resemblance between the two widely separated fishes.

But what the muskellunge resemble and how they act in Presque Isle Bay, when hooked, we must rely upon the stories of veteran fishermen, who tell of their experiences while in quest of this celebrated game fish.

Al Rossi claims there are two attributes necessary to becoming a successful muskie fisherman, one is perseverance, and the other is a tolerant wife. While Al fishes for yellow pike, smallmouthed bass, his great indulgence is muskie fishing in Presque Isle Bay.

This veteran Erie Muskie Angler is shown with No. 164, with a friend, Murph, looking on, in the picture. Since this fish was hooked and landed he has taken No. 173, also caught in the bay.

Al, who lives at 2726 Feasler Avenue, Erie, was introduced to muskie fishing some 25 years ago by his Uncle Jake Mainzer, who was in the boat when the fish was taken. He was using a homemade, ordinary size copper spoon, with bucktail combination, and a 24-pound test Shakespeare line, Pleuger Akron level-wind reel, and a 5½-foot True Temper rod, and the location was about 500 yards north of Strong's home on the bay front, when he struck. The fish surfaced several times, then coming completely out of the water, forming a half arch. This happened twice, similar to that of a smallmouthed black bass when hooked. Maneuvering the fish took about 10 or 12 minutes, and many times when bringing to the boat, and the fight about over, he would swirl away. He was finally gaffed, with his struggles almost ended.

The significant thing about these strikes, Mr. Rossi says, was that all plugs and chubs that were used for lures were hit broadside in practically every instance, and spinners would be hit on the aft end.

Mr. Rossi thinks Presque Isle Bay is filled with this cannibalistic creature, who at times will not hesitate to attack his mate, and this writer agrees, that natural food is so plentiful, in this area of the bay, what chance does a poor fisherman have with live or artificial bait.

But he does have a chance, as Al has proven many times, if the fisherman stays with it, and weather conditions or time of day does not seem to affect their

GENE AKRE of Erie pictured with muskellunge, caught in Presque Isle Bay. It weighed 13 pounds and was 37" long.



pugnacious nature one bit, when it comes to striking lures.

He trolls, casts with artificial bait and live, to lure them to the boat, and time of course does count, but not too long as he states, one morning he was fishing only a short while, when on the 25th cast he had a muskie strike. He has taken many muskies from the Bay, among them the largest was a 27-pounder, 46 inches, and the smallest 7 pounds, 31 inches in length. Two taken recently weighed a little over 19 pounds each.

He is a member of the Presque Isle Sportsman's League, and a member of the Sportsman's Club. His uncle Jake has been fishing for muskies for 29 years, and he has been at it for 27 years, both showing a total of 56 years fishing for these battlers of Presque Isle Bay.



AL ROSSI of Erie pictured with muskellunge and Murph White looking on. Caught in Presque Isle Bay. Weight 23¾ pounds and measured 47½" long.

The difference in Al Rossi's muskie fishing and that of Gene Akre is that in 33 years Gene has caught only one worthwhile fish, while Al has caught many, but let us listen to Gene's story. He says, "the long wait" of 33 years finally paid off, when I landed the first muskie from Presque Isle Bay one day during the month of September in 1957. I did not have to travel to the Dominion of Canada, as my Dad and brother have done to obtain a 'maskinonge' or muskel-

lunge." There are so many ways of spelling the Indian name of this fish that ichthyologists have adopted the one apparently most in use only after and orthographical research which revealed 24 ways of spelling it. And so muskellunge it is.

Asked how he brought this largest member of the pickerel family to boat, he said, "We were trolling between six and seven miles per hour, and the bait was a medium sized Silver Flash, Pikie Minnie, and about 200 yards from the Cascade Docks he struck. I was using a 20-pound test line and about 85 yards was out from the reel. He came to the surface, about 10 or 15 yards away from the boat, then he sounded. Of course the battle was on. After 10 minutes he was brought alongside, and my fellow fishing partner, Brad Swanson, gaffed him. The fish was taken about 11:40 a.m."

In reply to the question, as to whether he fishes for other species, Gene said, "When I go fishing, it is definitely for muskellunge, and the efforts put forth during this time have been gratifying, and were well rewarded in taking this beauty from Presque Isle Bay." The fish measured 37 inches and weighed 13 pounds. Gene tells this writer that he has taken three muskies since, two males; and one female October 27, 1957, that was 42½ inches long and weighed 21 pounds, 12 ounces. The fish contained 2 pounds of roe, and had fresh suction marks of a Lamprey.

Dr. Sample Barton and Dr. Henry Baker of Erie delight in muskie fishing in Presque Isle Bay, and they are at it every spare moment. They caught a 34-inch which weighed 9 pounds, male. Lure used was a Ciscoe Kid treble hook plug, with a 3-foot leader on a 15-pound monofilament line, Bache-Brown reel with Action glass rod.

The same weather prevailed when they hooked five of these game fish, which look like a three-propeller craft. Three were boated, 2 weighed 10 pounds each, and one weighed 16 pounds; one was released, not legal size, and the other broke away.

The Bay was fished from the "Head," to the stake near the Public Dock. Drs. Barton and Baker have taken many muskies from Presque Isle Bay, and they claim average time for one fish caught is anywhere from 8 to 10 hours of fishing time.

Wendell Good, a practicing attorney residing in Erie, hooked a muskie in the Erie Bay off Waterworks Park, on the Peninsula, while trolling with his sister, Janice, and Carl Merl. The fish weighed 30 pounds and was 47 inches long.

Harrison Cray of Erie caught a 42-inch muskie in Presque Isle Bay. He was using a Grant Lynch double spinner. The fish weighed 16 pounds.

Not only are these fish caught in lakes, but in rivers like French Creek in Pennsylvania, and other North American rivers. H. H. MacKay, near Montreal

in the St. Lawrence River, reports the capture of a "maskinonge" weighing 67 pounds and having a girth of 27 inches. Unless equipped with a rod suitable for a large fish, the angler may have to play the fish an hour or more before landing, Mr. MacKay says. This apparently does not seem to be the case when fishing for this voracious feeder in Presque Isle Bay. The equipment seems to be good, but ordinary, and method of taking similar to fishing for yellow pike or black bass. From all accounts they are not sluggish from too much natural food forage, but the same violent fellows one encounters in lakes and streams farther north.

According to ichthyology, muskellunge when spawning in May swim around in pairs, keeping the same relative position in turning and going under logs, as if they were cemented together side by side. This would indicate an unusual method of copulation or joining, which is dissimilar to other members of the piscatorial family. If frightened they separate but soon come together again.

During the spawning act the fish roll over on their sides, the eggs and milt being extruded, and scattered among the vegetation of the waters. Muskellunge do not make nests and protect their eggs and milt in the ordinary way.

The male is more alert than the female, but nervous. The four fish caught by Mr. Akre were three male and one female, and all those caught this season by Mr. Rossi were mixed male and female. The doctors' were all male.

The writer has a large muskellunge head mounted on a walnut plaque, which has been dubbed "Old Cross Bones." Looking at the monster's head, one seems to see what man conceives to be the personification of evil, and artists, it is believed, would not have to search far for a model to reproduce Satan's physiognomy on canvas.

On the other hand the characteristic of a game fish such as the muskellunge, could symbolize the strength and fortitude which enables it to face difficulties and dangers of life. It does not however symbolize the modest fish by any means, which can go long periods without food, as the salmon, which stands for temperance, or the sword fish which represents virtue of justice and which makes clear cut distinction between right and wrong.

It is believed that for every muskellunge that is caught by a fisherman in Erie Bay and public notice



ATTORNEY WENDELL GOOD of Erie with muskellunge caught in Presque Isle Bay. Fish weighed 30 pounds, and was 47" long.

has been given of the catch, there are a dozen fishermen who do not reveal the fact that they are hooking these giants of the pickerel family right along.

It is evident that at least three "peas" are required in the fisherman's "pod" when he goes after muskellunge, namely: persistence, patience and perseverance, plus, of course, skill, coupled with the time element, good and proper equipment, to successfully land this North American Great Pike dubbed "maskinonge" by the Ojibway Indians.

CONSERVATION EDUCATION should begin with the small child and should create a reverent attitude for our natural resources. Then a deep sense of individual responsibility will follow.

It's a Complex Business—

By **WILLIAM VOIGT, JR.**, Executive Director
Pennsylvania Fish Commission

(Editor's note: This is the second installment of this article, which was drafted originally as a proposed chapter in a textbook being compiled by Senator Israel Stiefel of Philadelphia on the broad political science subject of "State Governance" in Pennsylvania. The initial installment dealt with the organizational structure of the Commission itself, with its early history, and with some of the operational policies and practices of the Commissioners.)

PART II

THE PENNSYLVANIA FISH COMMISSION

Modus Operandi, The Staff

An organization chart, if included at this point, would show the executive director immediately responsive to the Commission. To either side of his title box on the chart would be dotted lines leading to boxes indicating a liaison relationship on the one hand with the Office of the Attorney General for legal advice, and on the other with the Office of Administration for accounting services.

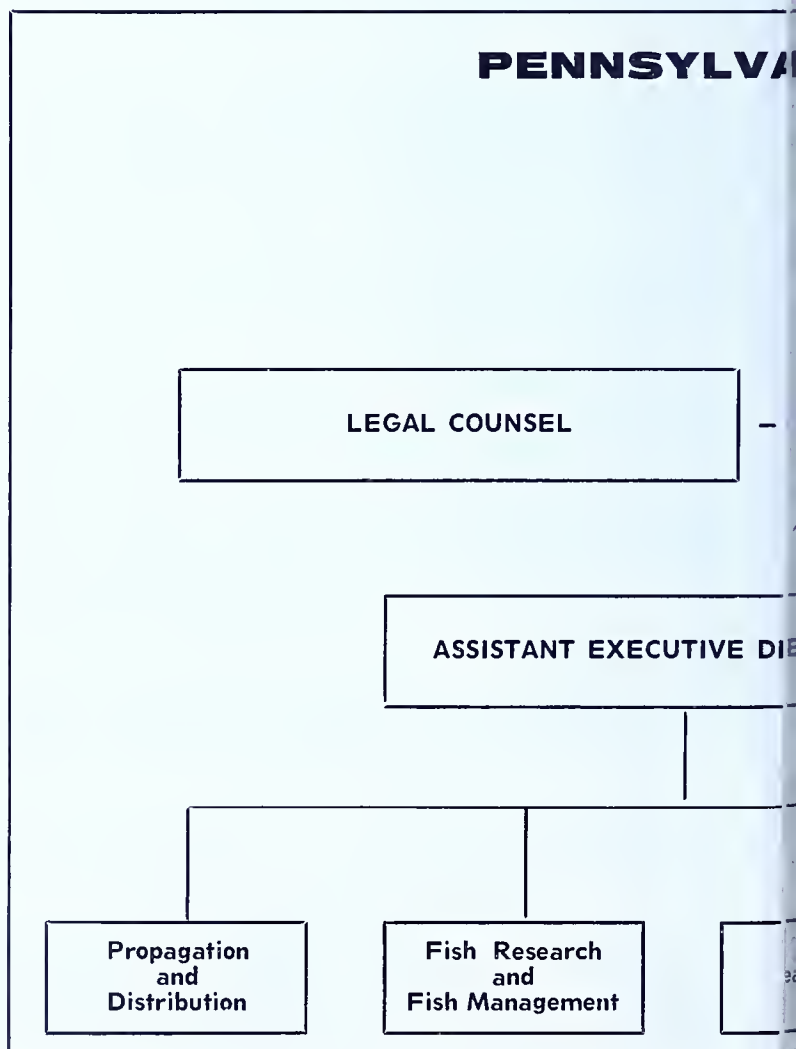
The director personally supervises law enforcement activities (one of his subsidiary titles is "chief fish warden"), public information and conservation education, and administrative services to all staff divisions.

Scientific fish management and related duties are supervised by the director through the office of the assistant executive director for fish matters. His job description shows need for a high degree of scientific knowledge, schooling, training and experience. This official supervises the work of the divisions of the commission having to do with fish propagation and distribution, fishery research and field investigations of fishing waters, lake and stream reclamation and rehabilitation, land and water acquisition and leasing to increase public fishing opportunity, and the engineering functions of building fishing lakes, developing and maintaining access to waters in which the public may fish and the physical improvement of streams to provide better fish habitat and more interesting fishing situations.

This chart of fishery organization has proved workable and reasonably efficient. The several division

chiefs have specific supervision. In turn, the field stations and personnel have direction and clear channels of communication through which they can operate without confusion.

The chief weakness of the structural organization, from the viewpoint of the administrator, is that the agency is of necessity small. In certain operations it is not feasible to have "organization in depth." Most of the division chiefs do not have qualified assistants at their sides, to take charge in emergencies, when the chief is away on official business, or for other reasons is not reachable. This condition sometimes forces the making of decisions at lower levels of authority, where background knowledge and experience is not always present. On occasion it tends to necessitate "going out of channels" in seeking a decision. The wheels may slow down, even stop altogether temporarily, pending the return to active charge of the responsible official.





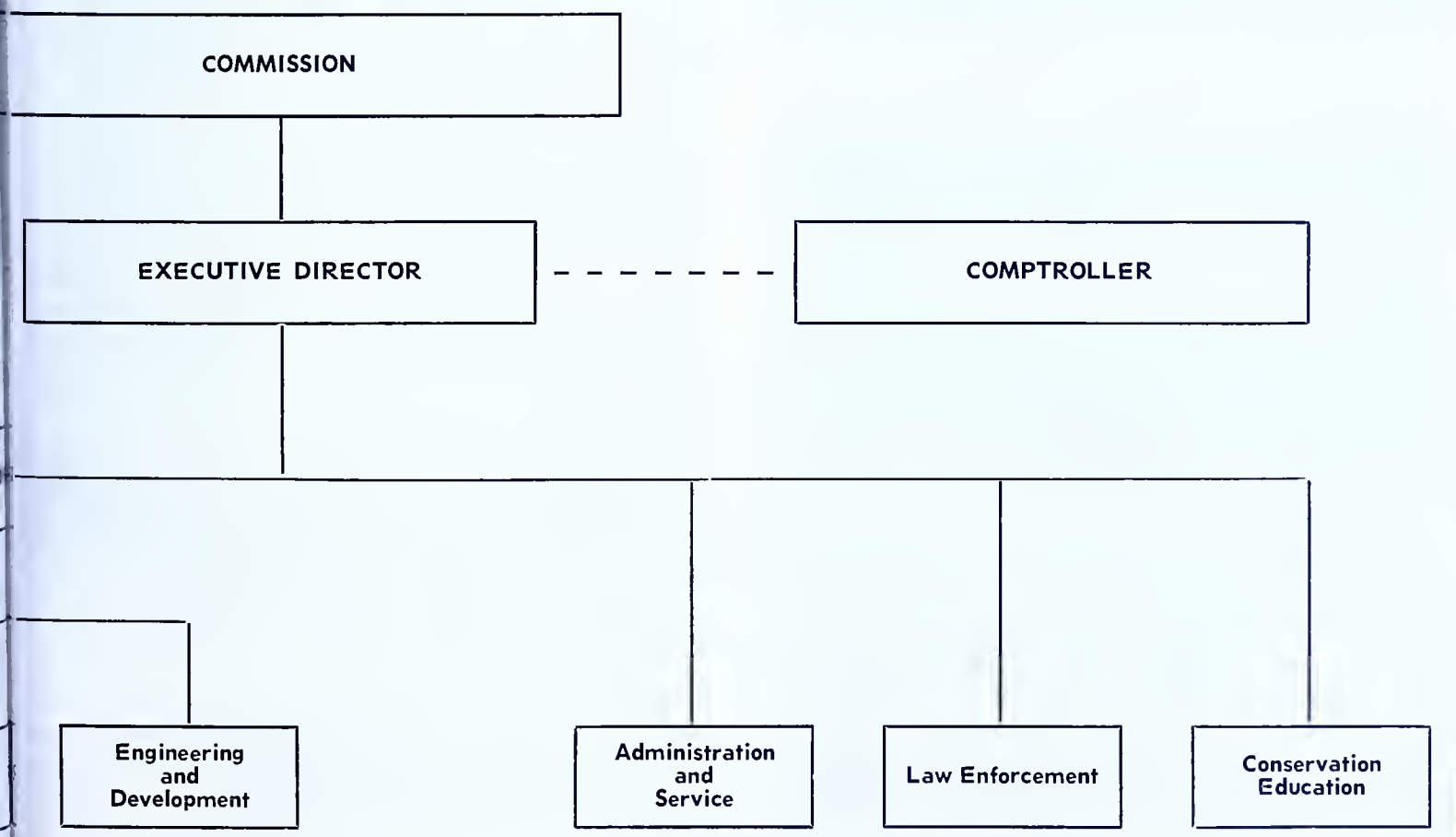
FISH WARDENS are shown learning the distinguishing characteristics of the various species of fish during one of the Commission's in-service training schools for its law enforcement division.

Another weakness lies in an expedient adopted for the staffing of six regional offices established by the Commission. The forces in these field offices are from the separate divisions of law enforcement and fish management. The warden-supervisor in each office is in charge of the work of the district wardens of the several counties of the region. The regional fishery manager usually works alone, except in summer months when he has a single assistant, and he often must enlist the help of district wardens, through the

warden supervisor. Each office has a stenographer, who handles correspondence and filing for both men. Under this setup the two men are equals; neither supervises the other. Yet they must work in harmony, coordinating their activities so as to share secretarial services equitably, and take care that each does not usurp the prerogatives of the other. This requires rare tact and, human nature being what it is, friction can and does develop when personalities clash or when caution in relationships is not always strictly

FISH COMMISSION ORGANIZATION CHART

OCTOBER—1959

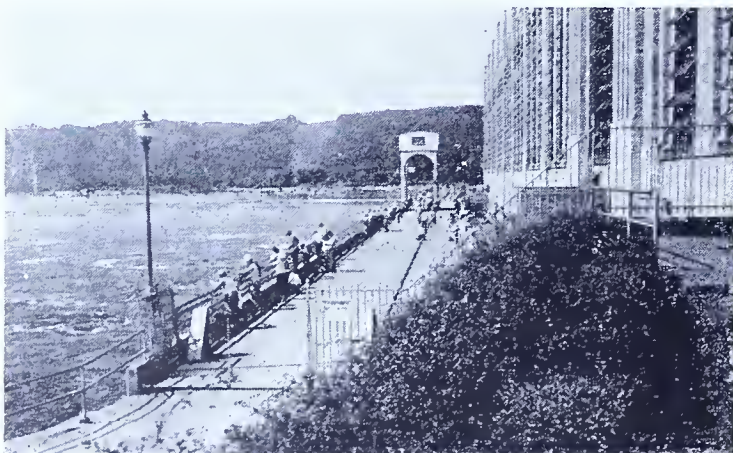


observed. An additional burden is therefore placed on the respective division chiefs who supervise the separate activities at the regional offices.

Periodic in-service training courses, regular staff meetings, field discussions of common or related problems attended by supervisory and other personnel from all Commission branches, surprise inspections and consultations, and other devices are commonly employed, and these help reduce internal difficulties. They also play an important part in sustaining morale. The long recognized psychological principle applies: An informed employee generally is a better satisfied and more efficient employee.

Changing Concepts

Through the years, both policy and administrative emphasis have fluctuated with regard to fish management and control activities. The stage of advancement of the science of fish management has been one factor in dictating emphasis. The degree of knowledge possessed by organized or other influential sportsmen has been another.

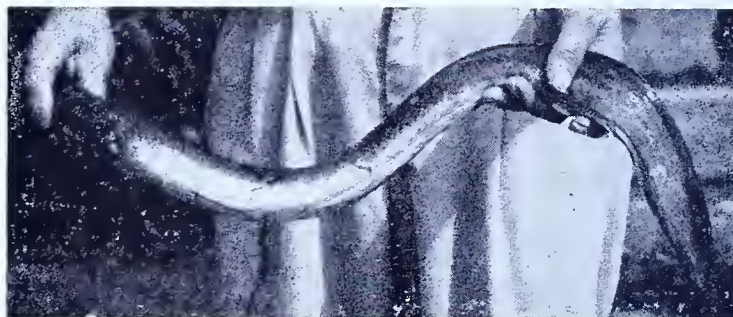


SAFE HARBOR Water and Power Co. dam on the lower Susquehanna River. A barrier to fish migration.



ADULT SHAD, above average size.

The relative abundance or catchability of the migratory fishes of the sea, such as shad, eels, and striped bass, preoccupied the present Commission's predecessors for many years, and is still of relative importance. When dams for water power to turn grist mills and sawmills blocked the runs of such fishes up the Delaware and the Susquehanna and their tributaries, considerable attention was paid to inventions intended to get the fish up and over the obstructions. Some gave temporary promise of success, but all failed.



EELS, too, were plentiful.

When fishways were regretfully abandoned in those years, attention turned to trying to catch and transport adult fish from tidewater areas to the pools and open reaches above the dams. This, too, proved infeasible for one reason or another.

Next came hatcheries, and the one at Donegal Springs near Marietta did hatch a lot of shad from eggs taken by hatchery techniques. This appears, however, to have been a desperation expedient, a groping for whatever might appease the fishermen deprived of what they had considered their heritage, and it was doomed to failure for reasons given earlier.

After it was demonstrated that hatcheries could hatch and raise certain kinds of fish to reasonable size, it was natural that there should arise a public desire for more and bigger hatcheries to raise more fish to put into public waters. How this grew, and the philosophy attending that growth, is not a brief story, and it must suffer here from too much brevity. It would be much simpler and more readily grasped if hatchery production techniques and the stocking of streams and lakes that followed, had been a straightforward matter of replenishing stocks that nature could not provide. This was not the case. Demands for stocking more and bigger fish often came even when there were abundant numbers of fish present in the waters. Had the science of fish management grown simultaneously with the science of fish culture, the story might have been a different, and happier, one. However, this was not to be so. Lacking the tools and knowledge available to the fish manager of today, those responding to the clamor could not know that often the reason the fish they caught were small was attributable to overpopulation instead of underpopulation of the affected waters.

Fish culture came first, and it took such a grip upon the public fancy that the science of fish management, of which fish culture rightly must be considered one part, has had difficulty eradicating myth and false reasoning from the public mind. Much was "known" that wasn't so, and the effects of the early faulty learning lingers on.

This is not to say that certain waters did not become depleted, suddenly in some instances, gradually or progressively in others. Almost invariably the depletions came about as a direct or indirect result of the activities of man.



(Above) **BEAUTIFUL STREAM** ruined by mine acid.

(Right) Two shades of water coloration can be seen here on the Sinnamahoning Creek that flows through Emporium, Pa.



Water pollution from sewage and industry, including the great coal industry, has killed off stream after stream. The clear cutting of timber from stream banks and watersheds caused severe erosion in some instances. This was damaging in that the silt tended to smother out organisms in the food chain of the fishes, and covered rock and gravel spawning areas. Exposure of the once shaded streams to the sun caused the waters to be warmed beyond the tolerance of such cold loving fishes as trout. Lack of moisture holding vegetation and soil caused smaller perennial streams to dry up to the point where they could no longer support abundant fish life, and even larger streams and rivers were adversely affected.

Further erosion and accompanying difficulties were occasioned by lack of knowledge of sound conservation practices by landowners plus failure to carry out those that were known. This either caused additional problems or accentuated the existing ones.

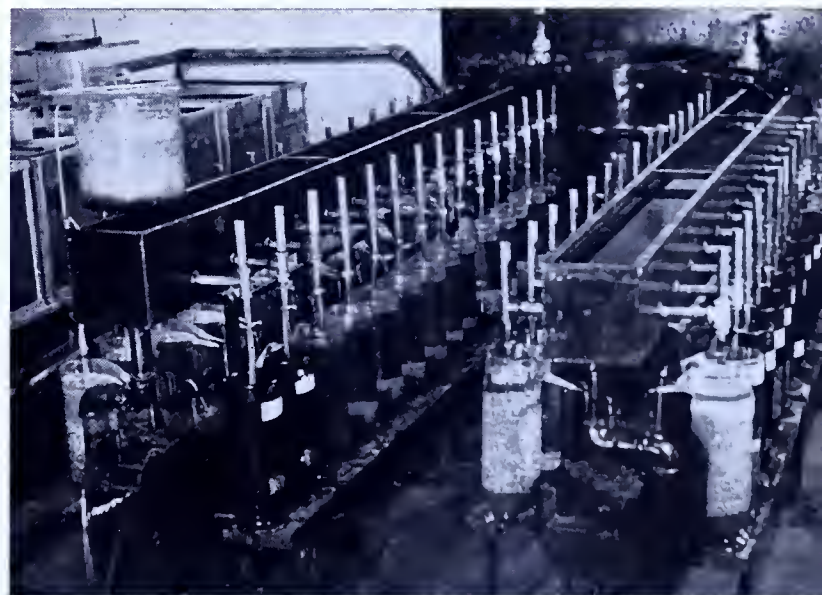
All these things were accompanied by a rising human population, and by the explosive growth of an industrial civilization that demanded ever more water for an ever expanding variety of uses.

Having learned to operate hatcheries successfully, it was natural for the fish culturists of the time to move full scale into the production of fish in their jars, tanks and ponds, for release into waters where they were known to survive. Literally billions of fish of many species have been raised to various sizes in Commonwealth hatcheries and put into lakes, rivers and creeks. For many years the chief activities of consequence carried on by the official agency were fish culture (the rearing and distribution of fish), and law enforcement. It was 1939 before a schooled, trained and experienced aquatic biologist was employed by the Commonwealth.

Fish propagation and distribution is still a large and costly aspect of Commission operations. A substantial degree of balance in activities is being achieved nowadays by building up other phases of fish management, and providing a greater variety of services to fishermen, rather than by reducing emphasis on fish culture. Trust in hatcheries and in the stocking of catchable trout and other species, to keep public angling alive and vigorous, has lingered in the minds of many fishermen long after experienced scientists have learned to question the complete adequacy of this activity alone.

It should not be inferred that fish managers of today want to do away with the hatcheries. Far from it. However, the fish management specialist believes that fish rearing and stocking should be a selective practice.

A BATTERY of open jars in which trout eggs are incubated.





AN AERIAL view of the Commission's hatchery at Huntsdale, Cumberland County.

On the basis of this newer thinking, most stocking would be carried out in accordance with biological realities discovered in the course of carefully planned, executed, and evaluated field research. So-called sociological stocking, in strictly "put and take" water, has its rightful and proper place, but should also be conducted on the basis of careful and dependable research and planning so as to try to guarantee the greatest feasible return of the stocked fish to the angler's creel.

The scientific fish manager is making considerable headway toward acceptance of the newer findings by the fishing public now, but this course has been slow and painful. No one likes to be told, and to face up to the fact, that the things he has accepted as gospel for a generation or more may prove to be less than one hundred per cent correct. Indeed, fish management is still not well understood, generally speaking. A fish manager, upon making a study of a body of

Lake reclamation in action. Note the "tools." Boats, nets, mobile laboratory, chemicals, etc.



water, may be forced by the facts he has discovered to tell the fishing public that the poor fishing that brought about the making of the study cannot be corrected by simply stocking another truckload of fish from the hatchery, but will require more heroic measures that may take years to come to fruition. The average fisherman wants the "good old days" brought back tomorrow, not next year or a decade hence.

Too, the fish manager is himself still groping toward facts that are elusive. The creatures he studies aren't out in the open, as are the cattle of the pastures on which the farm manager and geneticist conduct their studies. They are native to an element that lends itself to secrecy in habitat and habits. Fish management research nevertheless has burgeoned in recent years, and the aquatic biologist who seeks to keep abreast of latest developments must burn much midnight oil reading and digesting numerous and voluminous reports. He must evaluate the scope and techniques of the research reported, learn to judge validity of conclusions, and then seek to relate the useful findings to comparable waters and other conditions, if any, in the state or part of the state where his activities are centered.

In the process of burgeoning, fish management has developed, or caused to be devised, a variety of new tools to aid in the work of the manager. From the chemist and physicist he has borrowed the microscope and other instruments, and from the hydrologist water flow measuring devices. From medical and other research he has taken a variety of laboratory equipment, and techniques for the pathological study of human ills have been and are being applied to fish diseases. Through a combination of these, the borrowed and the devised, the fish manager now is in position to learn much more than previously has been known about fishes, to aid in the huge task of researching the waters and eventually producing answers that can enable the policy making Commission to be sure that its decisions as to stream and lake management are wise and feasible.

The task would be easier if fish managers were dealing with static conditions, but this is not the case. Streams and lakes change, sometimes swiftly, some-

times slowly. The pace of change can be and is modified by the actions of man. With limited funds and manpower, the Commission can anticipate that it will be a rare day when it can say that its records and knowledge of all pertinent facts are up to date and completely accurate on any body of water, lake or stream. Fish management is a dynamic science, and must be recognized and understood as such.

The Commission and the administrator have learned that even when the facts are clearcut, changes to fit those facts can be made only as rapidly as the fishing public has been conditioned to receive them. This entails a long, tedious process of education.

Slowly but surely, scientific fish management procedures and findings are expected to become the regular and accustomed thing. When that day is assuredly here, many of the current difficulties of policy making and administration can be reduced. It should be recognized that these cannot be eliminated, and it must be made crystal clear that scientific fish management alone is not a panacea for all recreational fishery ills. There are landowners who still do not practice sound soil and moisture conservation. There are timber operators who continue old fashioned clear cutting practices. The horse and buggy has not been totally replaced by the automobile. The old devices, the ancient ways, still have their devotees in numerous things, and in some areas there is a logical place for them. It undoubtedly will be found so in fish management.

Even the concept of the duties of the fish warden has changed with the passing years. Time was when the warden was considered little more than an outdoors policeman. He was out to catch and prosecute law violators, and his task was an unpopular one at best. Written fact and fiction are full of stories in which the game or fish poacher was the hero, the warden the villain of the piece.

That, too, has been a long time in changing, but change is coming, and the work of the warden also is undergoing modification. A breakdown of the activities of a typical Pennsylvania warden for a year would show that probably no more than 50 per cent of his working time is spent on fish law enforcement,



BIOLOGIST equipped with special lens, reads enlarged fish scale in Commission's laboratory.

and that other official activities included assisting the fish managers, investigating stream channel changes in connection with highway building, investigating pollution cases, inspecting and reporting on proposed coal mine drainage that might affect streams in his region, making speeches and showing films to a variety of organizations including schools, assisting in civil defense work, helping the state police, cooperating with enforcement officers of the Game Commission, aiding in the stocking of fish, carrying out fish rescue operations, giving lectures and demonstrations in connection with boating, and a variety of other things.

The third and final part of this chapter in Senator Stiefel's book will deal with the boating responsibilities of the Fish Commission and with important auxiliary activities that have a bearing on the subject.

Dan (Uncle Dan) Schnabel Dead at 84

Daniel R. Schnabel, former member of the Pennsylvania Fish Commission, passed away at his home in Johnstown on Sunday morning, August 30, 1959.

Prominently identified with many civic and business enterprises in Cambria County, "Uncle Dan," as he was affectionately known, served on the old

Pennsylvania Board of Fish Commissioners for a period of thirteen years.

The PENNSYLVANIA ANGLER joins with his many friends in expressing sincere condolence to Mrs. Anna K. Schnabel, his wife, and family.

**The dollar would have no value were it not for
the vast natural resources which back it up.**

Not by Dollars—Not by Laws



By ERNEST SWIFT

Executive Director, National Wildlife Federation

The entire philosophy of American culture has all the earmarks of revolving around the sanctity of the dollar—especially the American dollar.

However, there is no argument but that we need some basis of exchange and the United States dollar has been very satisfactory, even with inflation.

But the dollar has become the standard and symbol for fulfillment of all human desires, as well as a means of controlling the destiny of peoples of other nations throughout the world so that our standards will remain secure.

With the dollar we attempt to purchase security, friendship, education, plush living conditions, integrity, recreation and a guaranteed equity in the hereafter.

If we cannot obtain our objectives with the dollar standard, we immediately want to pass a law. With a new law and a dollar to back it up, we take the sanctimonious attitude of a job well done.

Today at least one-half of the taxpayer's dollar goes to purchase national defense, in an effort to secure us from outside aggression.

With more dollars we attempt to buy friendship throughout the world by distributing both valuable and useless goods to the so-called less fortunate nations. However, we apparently fail to understand that with our purchase of friendship goes the American air of superiority. People do not like to be obligated and deeply resent condescension.

In worshipping the clay images of living standards,

we attempt to bribe the heavenly hosts with material offerings.

Because true education is strictly an achievement gained through effort and mental discipline—and a thorny road at best if ever mastered—the essence of educational precepts are being diluted. Standards are lowered so that mediocrity will not be offended, and delightful substitutes of a social nature replace cold, basic study. Many of these substitutes and diversions are more costly than the drabness of sound education, but they do give opportunity to boast about all the money spent on the school systems.

Recreation is no longer a matter of a rag doll, a tent in the back yard made of old quilts, a ball made of yarn, mumblety-peg, a swimming hole in the “crick,” going barefoot, a spoon hook with a hand line, a highly prized shotgun or rifle; or simply a long walk in the country.

From the cradle to the grave, recreation has become industrialized, regimented, professionalized and is astronomically costly, which tends to cheapen it and make it tawdry. Today turning on and off the TV constitutes most of our muscular exertion.

The individual is no longer the creator of his recreation. The manufacturer of recreational goods and the recreational goods merchant make the people pay plenty if they are presumptuous enough to want fun.

There is nothing wrong with the dollar, but it is not the answer to every human desire and ambition. The dollar would have no value were it not for the vast natural resources which back it up.

Raw resources and manufactured goods are the only material elements that can be used as a basis for the dollar standard. What the dollar does, is to merely simplify barter.

Some people can see no value in resources unless they are measured by the dollar standard. Sometimes this is strategy used to place other values in a defensive position, such as outdoor recreational opportunities and esthetic values.

Those who can see values other than monetary are accused of emotionalism. “Esthetic” appreciation has become synonymous with emotionalism almost to the point of being a dirty word—a person valuing the esthetics is accused of having a perverted outlook.

I have seen far more emotionalism displayed because of the loss of a dollar than I ever have from the loss of esthetic values.

As resources become scarce the value of the dollar pyramids. But when no resources are left, the dollar cannot be eaten, will keep no one warm, will not house people or put clothes on their backs; nor will the dollar add much to the country's scenery.

Too many conservationists today—professionals and amateurs—have been deluded by the philosophy that

resources can be saved simply by appropriating money and passing laws.

Some professionals, so-called, have never exerted their mentality to thinking the matter through to a conclusion. The individual responsibility of citizens is too little emphasized.

It is plain to see that with all the legislative mills grinding out appropriations and a myriad of other laws, we have arrived at the dubious point of progress in the management of resources where either we have to subsidize, bribe, police or pass other restrictive laws to save anything.

When I hear professionals check off their legislative victories for big appropriations and more laws, I wonder how genuine these victories are. Probably



CHILDREN display keen interest in lecture-lesson about fish and outdoor recreational resources.

their way is the only immediate solution, but to me it simply reflects a cesspool of mass ignorance and poor citizenship. If individuals had more sincerity about resources, we would have less need for appropriations and laws.

Stating the issue bluntly: Should a supposedly patriotic farmer, who would go to the defense of his country in time of war, be subsidized to carry out sound resources practices on his own farm? Is protecting his farm not a patriotic and civic duty? What will he profit from his dollars in the bank when his farm has eroded to the sea?

We must consider the industrialist just as patriotic. Then why doesn't this patriotism extend to cleaning up the stream pollution he has caused? Take the red-hot, avid sportsmen who eternally criticize public conservation agencies: if they are so pure and sincere, why is it necessary for the states to spend 30 per cent of their fish and game revenues for law enforcement?

Is patriotism and civic responsibility simply a short-term proposition for the citizen?

For a long time now, much has been said about the dire need for public education in resources. There

are many diverse opinions about who to educate, what to stress and how to educate. The subject continues to be debatable, and let us recognize there are many unsung heroes doing a masterful job at the community level.

There is no question that education is a strong force to forestall ill-advised and unwarranted change, as well as to promote sound and intelligent planning for the future.

Resource education should not be a heterogeneous

mass of material crammed into the minds of people like force-feeding a Christmas goose with noodles.

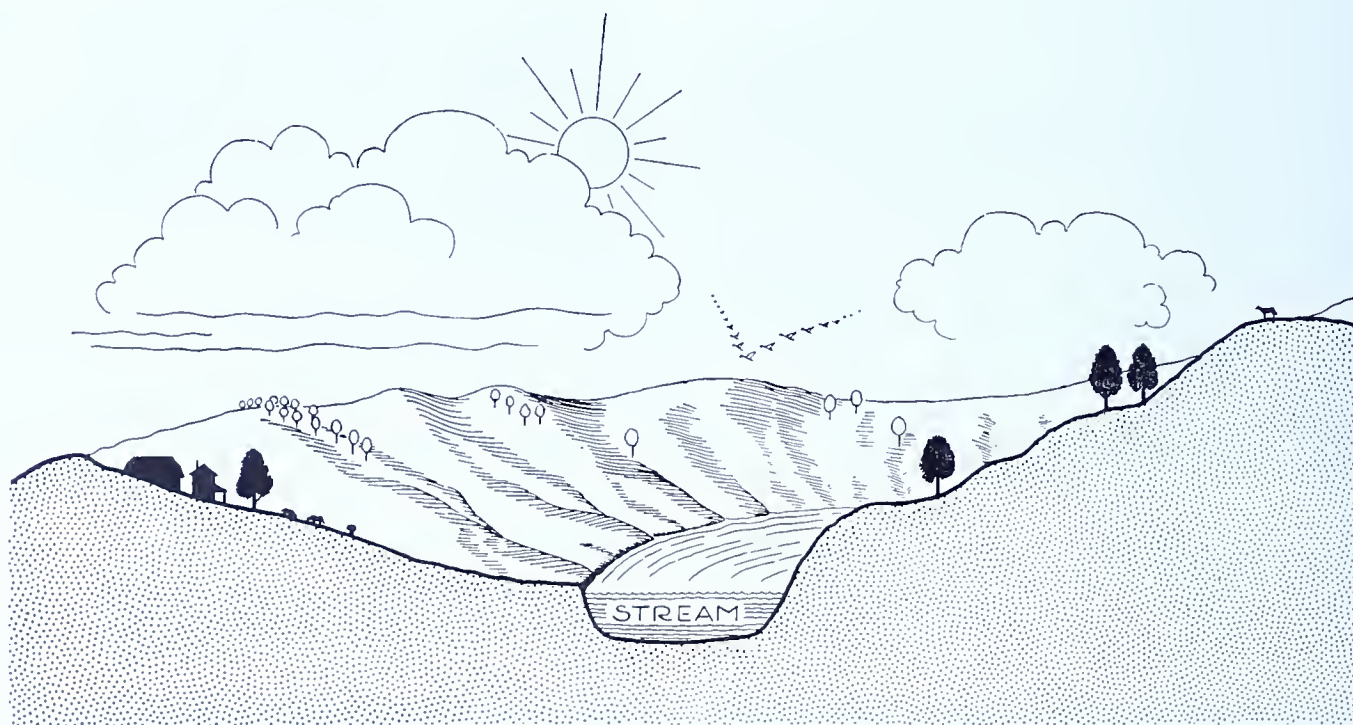
Conservation education should start with the small child and should relate to his daily living habits to instill in him an awareness of the problems. But above all conservation education should create a reverent attitude for resources and then a deep sense of individual responsibility will follow.

If that time ever arrives there will be much less need for appropriations, laws and lobbying.

What Is a Watershed?

United States Soil Conservation Service

THIS DIAGRAM shows a small watershed. Water drains into the stream from top of each hill and all land in the background.



“Watershed” is a new term to many people. The development of soil and water conservation and flood prevention in watersheds is bringing the word into more common use. Its definition is almost as simple as the well-known phrase “water runs down hill.”

The drainboard that carries rinse water into your kitchen sink may be compared to a watershed.

On the land, water that does not evaporate or soak into the soil usually drains into ditches, streams, marshes, or lakes. The land area from which the water drains to a given point is a watershed.

When you were a small child, you probably had a

favorite mud puddle in which you liked to play. The part of the yard from which the water drained into the puddle was its watershed.

Possibly a small stream ran by your house. It may have been dry most of the year or it may have flowed continuously. Water from a few acres drained into that little stream. Those few acres were the watershed. This small stream and others like it ran into a larger one. The small streams and the land they drained were the watershed of the larger stream into which they flowed.

Small- and medium-sized watersheds make up the

larger ones. The Mississippi River, for example, drains a watershed of about 1,243,000 square miles. That watershed is made up of thousands of smaller ones.

So, wherever you live you are in a watershed. It can be just your own backyard or the area drained by a small creek or a large river.

Your watershed may include farm or ranch land. It may include hills, or mountains or both. Some of it may be rough, rocky, or marshy land suited only to timber and wildlife. Some of it may be covered with towns, suburban developments, or industrial plants.

You and the people who live in a watershed are a part of the watershed community. So are the animals, the birds, and the fish. All depend on the watershed, and they, in turn, influence what happens there—whether it's good or bad. What happens in your small watershed also affects the life of the larger one because water, as it runs downhill, affects people in so many ways.

Why your watershed is important—Water may be a friend or it may be an enemy. If it runs off the land too fast, it cuts gullies and carries off topsoil which should be kept on the farm to produce our food and clothing. The soil and debris which the water carries into streams and lakes may spoil fishing. It may reduce the amount of water the stream or lake can hold and thus decrease the water supply for your town and your bathroom. Such sediment carried downstream by runaway water may greatly increase the cost of cleaning and filtering the water you get from the kitchen

faucet. It can interfere with the hydroelectric plant which produces your electricity. This may increase your electric bills.

If too much water runs away too rapidly, it causes a flood which damages farms, ranches, crops, property, homes, highways, and utilities. It may take lives. Choking of stream channels with sediment makes floods more serious because the stuffed-up stream bed can carry less water. Sediment deposited in reservoirs after heavy rains reduces the amount of water that can be stored for use in water-short areas. When water does these things it is an enemy.

But water can be slowed down and used to better advantage when soil and water conservation methods and other flood-prevention measures are put into effect all over a watershed. Terraces, strip-cropping, more grass and legumes in crop rotations, improved pastures, and other practices make more water soak into the soil for use of crops, pastures, and range. Some of it later will go into streams, lakes, or underground storage to be used in other ways. It doesn't clog streams and water supplies. Improved irrigation systems which waste less water leave more for other irrigators to use and help produce better crops. Thus, more water is available for the many uses people make of it. Then water is a friend.

More detailed information regarding soil and water conservation and watershed protection and flood control may be obtained from your local Soil Conservation Service office.

George Washington's Fishing Tackle

A most interesting relic indeed is some fishing tackle which belonged to George Washington. According to a description published in a 1906 issue of "Forest and Stream," it consists of a "number of fish hooks, some silk thread, bits of wax, a piece of hairline and an oval japanned box, 4 inches long, 3 inches wide and $\frac{1}{4}$ inches deep in which it was contained." The shanks of the 19 hooks are flattened at the ends.

According to Alfred G. Petrie's book, *A history of Lambertville, N. J.*—when Washington died he left

his fishing kit to his personal physician, a Dr. Craik. Craik in turn bequeathed the kit to George Coryell. Mrs. Askel Bryan of Lambertville, a descendant of Coryell, gave the kit to the Mt. Vernon Association of Mt. Vernon, Va.

Recently the Washington Crossing Park Commission obtained the kit as loan and it will be on display at the historic Thompson Neely House of the Washington Crossing State Park in Bucks County, Pennsylvania, from September, 1959, until the early part of 1960.



"HOWDY"—the raccoon—says:

Don't be a litterbug!
You CAN take it with you.

"Match the Hatch" with

A Pocket Fly-Tying Kit

By JOHN F. CLARK

Exasperating isn't it? Fish jumping all over the place and you just can't seem to match the fly they're taking. Course if you had your fly-tying gear you could probably whip up a pretty fair copy. But shucks, your tying equipment is back home.

That is, it was, until now. You can put this simple little pocket kit together with very little effort or expense. The keynote here is a variety of materials in small amounts and a minimum of tools. Of course some knowledge of the insect life along your own



HERE ARE some of the tools and materials you'll want to put in your kit.

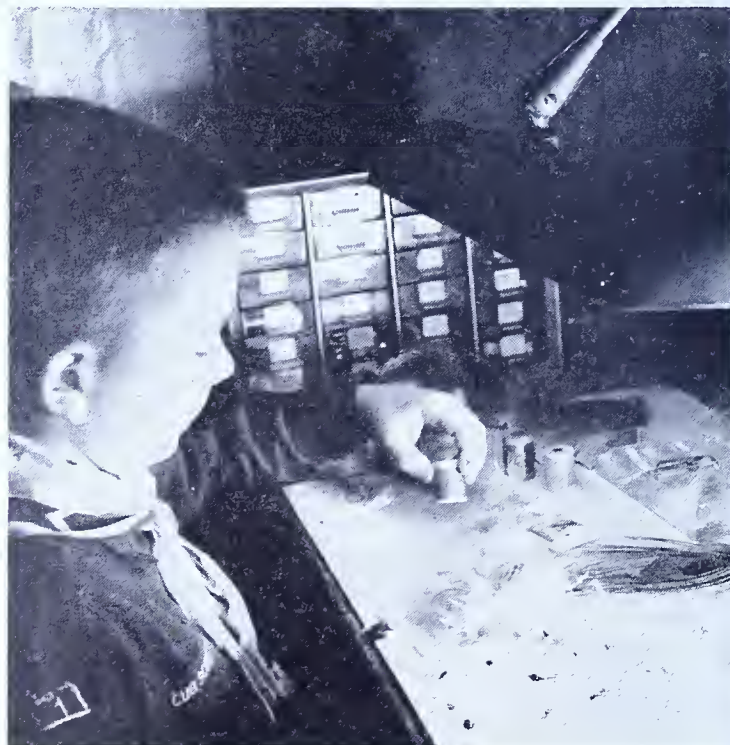
local streams is necessary so that you can select tying materials that will best match the local bugs.

All of the materials and tools are contained in a small, compartmented plastic box of the type that you can buy at most tackle stores. The one shown here is 1¼" x 3½" x 7". It fits very nicely in the pocket of your fishing jacket or vest. Your tying vise and some of the other tools will have to be tailored to fit the box. We took one of the smaller vises and cut it to size as the photo shows. This, of course, makes it a hand vise, but with a bit of practice you'll find that it works just as good as a table model. A large needle serves as a



EVERYTHING fits neatly into the plastic box.

SELECT THE materials carefully to match a variety of insects in your vicinity.



bodkin and a small nail clipper takes the place of scissors. A spool of tying thread, hackle pliers and a small vial of head cement completes the tool requirements.

Choose your tying materials carefully! Tails and Hackle—A variety of saddle and neck hackle in many different colors. Wings—Duck side feathers, etc., in various sizes and colors. Place the feathers in small cellophane envelopes. A small section of deer hide (with hair attached) supplies you with hair for hair wings, bodies or tails. Hooks—One or two each of the most popular sizes and weights. Body Materials and Ribbing such as floss, chenille, spun fur, wool yarn, tinsel, etc., can be wound around a square of cardboard. (Cut the squares to fit the compartments in the box.) Cut a small notch on two sides of the square to hold the materials in place. By the way, we used about 12" of each of the various body materials.



WRAP BODY materials, etc., around a square of cardboard. Note the slits to anchor the ends of the material.

Several different types of kits can be improvised by varying the size of the box and using materials to meet a particular need. For instance you can have a kit for wet or dry flies, one for streamers, one for hair bass bugs, etc.



SAW OFF a piece of the vise so that it fits the box.

THE VISE is held like this while tying.



No matter which kit you make up you'll find that your fishing will improve considerably by being able to "match the hatch" right on the spot rather than waiting till you get home.

FOR THE CAUSE

If a slight glow emanated from the Harrisburg office of the Pennsylvania Fish Commission recently, credit it to Paul D. Payne of Brooklyn, N. Y. His subscription renewal for the *Angler* included the following note and where-with-all: "... and \$4.00 for

the conservation fund."

Of course a letter of thanks went out to him, especially when it was recalled that his 1958 renewal included an extra \$1.00 for the same purpose and as it was the only such gratuity recorded.



CONSERVATION ACROSS THE NATION

Virginia Management Plus

Last year, fishery biologists of the Virginia Commission of Game and Inland Fisheries drained 77-acre Lake Brittle in Fauquier County. Purpose was to renovate the fish population in this warm-water public fishing lake. Heavy stocking had failed to maintain fishing quality, so the new approach was to drain the lake and remove large quantities of undesirable kinds and sizes of fish from the lake, restocking only the desired species and sizes. Upon refilling and restocking, a fertilization program was initiated—the first on any Commission-owned public fishing lake—to raise fish production and control undesirable weeds.

This year, fishing has shown decided improvement. District Fish Biologist Jack Sheridan has found that about 12 pounds of fish per acre were taken from the pond in May—a quantity that equals the total catch for the entire previous year!

Nuisance Campers

An item in MICHIGAN OUT-OF-DOORS (Flint) pointed up a growing problem with the nuisance camper. He was defined as “the guy that pre-empt[s] the fishing sites for months at a time with his trailer or tent, throws his empty beer cans out of the tent flaps, or over the side of his canoe, when he comes up on weekends.”

The real problem is that fishing sites were purchased with revenue from the sale of fishing licenses. Many of the campers do not have fishing licenses. However, they use the access sites for camping, picnicking, and parking, and often crowd out the fishermen.

The matter came up for serious discussion at the June meeting of the Michigan Conservation Commission at Higgins Lake. Several commissioners favored development of restrictive general regulations to safeguard the primary purpose of the access sites for fishing.

Last year the big complaint was the intensive use of the access sites by water-skiers, at the expense of the boating anglers. This year it's the non-fishing campers. Anglers naturally expect a fair shake at the fishing access sites they financed. Right now, they do not seem to be getting it in Michigan.

—*Sport Fishing Institute*

Great Lakes Pickerel Fluctuations Being Studied

The serious problem of drastic fluctuations in the occurrence of pickerel and other important Great Lakes fish is being studied by biologists of the U. S. Bureau of Commercial Fish-

eries in cooperation with the International Great Lakes Fishery Commission and the fish and wildlife agencies of the States bordering the Lakes. At the present time there is no evidence to support the view that commercial fishermen have caused the decline of pickerel in Lake Erie. The studies thus far show that the important species of fish in Lake Erie, including the pickerel, fluctuate naturally because of uncertainties in the Lake itself.

At times a complete loss of the reproduction of these important species leaves a dearth of the fish in the Lake for a period of years. Sometimes these same conditions which cause drastic declines in the abundance of one species act favorably upon the reproductive processes of other species and the result is that there is a natural waxing and waning of many of the fish populations in Lake Erie. Studies on Lake Erie over the past 50 years have shown substantially the same picture.

—*American Fisheries Society Newsletter, August, 1959*

Gordon Receives Walton League Founders Award:

Seth Gordon, one of the nation's foremost authorities on wildlife and related natural resources, was presented with the Founders Award of the Izaak Walton League of America at its recent convention. The League's highest conservation award went to the former director of the California Department of Fish and Game for “dedicated service to natural resource conservation in an unparalleled career covering 45 years of public service,” according to the Wildlife Management Institute.

Gordon presently is on the President's Water Pollution Control Advisory Board and is vice president of the North American Wildlife Foundation.

Shades of Teddy

Theodore Roosevelt once said in talking about our famous Pennsylvania conservationist, the late Gifford Pinchot:

“It is not the critic who counts, not the man who points out how the strong man stumbled or where the doer of deeds could have done them better.

“The credit belongs to the man who is actually in the arena; whose face is marred by dust and sweat and blood; who strives valiantly, who errs and comes up short again and again; who knows the great enthusiasms, the great devotions, and spends himself in a worthy cause; who at the best knows in the end the triumphs of high achievement; and who at the worst, if he fails, at least fails while daring greatly; so that his place shall never be with those cold and timid souls who know neither defeat nor victory.



BOOK REVIEW

Good Fishing

By **R. W. ESCHMEYER**
and **GEORGE S. FICHTER**

The last book from the typewriter of one of the most forthright and best loved scientists in the field of fishery management. Published by Harper and Bros., New York. Price \$2.95.

The finished chapters and notes that "Doe" Eseh-meyer, former executive vice president of the Sport Fishing Institute, left when he died a few years ago, have been pulled together and completed by George Fichter, former editor of the now defunct Fisherman magazine.

The earthy language and straightforward style of Eseh-meyer have been captured well by Fichter, and if one didn't know the date of "Rube's" death and of certain elements of time since then that have been injected into the text, it would be hard to tell which of the two authors actually put which words down on paper.

Here is a volume that anyone concerned with better fishing should love and be proud to have on his book shelf. It is loaded with facts and informed opinion about that important business of trying "to shorten the time between bites" to which Eseh-meyer devoted his adult life.

As so many of Eseh-meyer's findings and publications did, this book has little patience for a number of dearly loved traditions and beliefs of fishermen that have either been disproved by the science of fishery management, or about which serious questions are now being raised. It is written in simple, plain "shirt-sleeve" English, doesn't contain any scientific gobble-degook, and where deemed necessary takes shots at both administrators and the pressure groups that persuade political authorities to intervene in their behalf.

The book is well worth the money—and it entertains as it instructs.

Penn's Woods West

By **EDWIN L. PETERSON**

Photos by: Thomas M. Jarrett

247 pages. Illustrated with 324 photographs. Published by the University of Pittsburgh Press, Pittsburgh, Pa., 1958. Price \$15.

"The trees stood, the valleys surrounded by wooded hills remained unchanged. The four seasons followed an endless sequence. There was no one to gather them into years, or to bundle the years into centuries." With these words author Peterson, aided by photographer Jarrett, set out on a naturalist odyssey into the sparsely populated area of Western Pennsylvania. The end result is a well written, beautifully illustrated and thoroughly enjoyable book.

Both Mr. Peterson and Mr. Jarrett are associated with the University of Pittsburgh, Peterson as professor of English and Jarrett as University photographer.

A year of outdoor research, exploring back roads, paddling in a canoe down the Allegheny, visiting parks and lakes, went into the creation of the material on these pages. Wildflowers and wildlife, moths and butterflies, mountains and streams, these were the objects sought, and nothing escaped their pen and camera. In a real sense this book is the carefully recorded natural history of an area through the changing seasons.

If you have enjoyed Thoreau's WALDEN you wouldn't want to miss PENN'S WOODS WEST, a rewarding volume for both naturalist and outdoorsman.

STREWBALLS COST VIRGINIA \$300,000

N. L. Nicor, highway landscape engineer for the state of Virginia, has informed the National Wildlife Federation that the Virginia Department of Highways spent \$300,000 during the year ending June 30, 1957, to clean up litter along roads. This figure, however, was a reduction from the \$400,000 spent in fiscal 1954, reflecting value of anti-litter campaigns.

—National Wildlife Federation

Conservation News

Hello!

My name is HOWDY

**My job is to remind people to have
GOOD OUTDOOR MANNERS**

I need a pledge to help me tell people how to get the most enjoyment from Pennsylvania's forests, fields and waters. I am asking all the boys and girls in the schools of the state to compose one for me. Won't you help?



Howdy

Send me a pledge!

Win a prize!

RULES OF CONTEST

1. Contest is open to all students and student groups enrolled in grades 1 through 12 in any school within the State of Pennsylvania.
2. Contest is to secure a pledge to be used in promoting The Pennsylvania Forestry Association GOOD OUTDOOR MANNERS project.
3. Selection of award-winning entries will be based on originality, neatness, spelling and brevity.
4. All entries must be postmarked not later than March 15, 1960.

The following well-known CONSERVATION PLEDGE may help you in writing your own for Good Outdoor Manners:

"I give my pledge as an American to save and faithfully to defend from waste the natural resources of our country, its soil and minerals, its forests, waters, and wildlife."

All prizes in U. S. Savings Bonds—First prize \$200; Second prize \$150; Third prize \$100; Fourth prize \$75; Fifth prize \$50.

Ask your teacher about this contest. Complete details are on a school bulletin board poster.

PENNSYLVANIA

Angler

November 1959

Guest Editorial...

The Importance of Natural Places

My boy is down at the creek this morning with his toes among the tadpoles and crawfish. There he sees, but does not question, the idle reflection of the world which wrinkles on the surface of the water. He is interested in capturing some minnows so that he can go fishing. The reflection of the world is the least of his worries.

While he might find it difficult to picture, I once waded in such a stream myself. For those few brief years that we call youth, my stream had about it that foreverness that such places acquire for children blissfully ignorant of the past and future. My stream was Gravois Creek, now roundly cursed as a flood hazard and health problem for suburban St. Louis. Once its waters came down to it slowly from a jungle of grass on a prairie land, from the dark cavities among leaves on wooded slopes, bearing stories of spiderwort on post oak flats, of the secret workings of mushrooms and the progress of bloom and bug and bud. Now its rushing waters speak profanely of concrete drains, sewers and a thousand contaminating substances, not to mention the sun-baked hills, cement crusted landscapes and the bleak prospect of signs.

What of this creek where my boy wades? Will it succumb to this misfortune, or a similar one? I have no doubt that it will. There is no prediction we can make with more certainty than that our population will increase, and that our means of destroying will increase with it.

We have been children and dreamed our little dream of an unchanging world. Now let us face the reality of Man's lack of self-control.

My boy's creek no doubt will disappear as mine and many others have done. I am as prepared for this as he is unsuspecting—but faced with this inevitability I preach against it. Soil erosion is inevitable too, but much has been done to stop the obvious excesses. Pollution is inevitable, but both sentiment and legislation are developing to control it. As exploitation has run rampant we have set aside parks and wildernesses in the more remote and rocky areas of our nation as impressive reservoirs of scenery and recreation. We have set aside a few playgrounds and parks around our cities. As yet, however, we have done virtually nothing about the preservation of those unique and important strips and corners of land, scattered in small tracts about the country, which have so far evaded progress and which remain, often close at hand, to give us and our children an inkling of the past, of the cumulative influence of time, and of the place of rock, plant, animal and man in the scheme of things—in short, over most of the nation we have done very little about preserving “natural” places.

When people grow ignorant of what is natural, then there is no obstacle to their growing unnatural themselves. Nature is the basis of common sense, an important item in the future of a nation. I envision the time when the natural areas being set aside now will become veritable shrines to which people and science alike will appeal for truth and inspiration. Once entrusted to protection these preserves will stand as visible evidence of Man's conquest of himself, of his admission of his identity with all life, of his respect for the creations of time, and of his ultimate dependence on nature.

—Alfred G. Etter, Mo. Nature Conservancy Newsletter

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JOHNNY NICKLAS, Photographer

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THE COVER—November Sky

Photo by Johnny Nicklas

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NOTICE: Subscriptions received and processed after the 10th of each month will begin with the second month following.

Fish for the Finding

by **DON SHINER**

(Photographs by author)



Readers of this magazine have recently read the startling statement that an estimated 10 per cent of the fishermen catch 60 to 70 per cent of the fish! This was disclosed after many creel censuses and polls were taken and the results analyzed. While this is the painful truth, it is hardly fair. Fish are part of our natural resources; there for all to enjoy and therefore the enjoyment of fishing and catching fish should be spread more evenly among the army of stream goers.

Different studies have concluded that the fault of a few catching the "mostest" is due to some persons having more "know-how" in stream, lure and bait techniques. Much truth is reflected in this. Hence, the larger, though unfortunate, group, must take it upon themselves to study the finer points of angling. One phase which they cannot afford to overlook is the knowledge of reading water. To know where to look for fish is a big step toward catching them. Reading a stream is vital to successful fishing.

STATISTICS say that 10 per cent of the fishermen catch 70 per cent of the fish. If the novice takes time to study the stream, this small percentage will move upward.

Sometimes fish are found in the most odd and unsuspecting places. It is therefore difficult to say exactly where trout, bass and pickerel can or cannot be found. However, there are certain locations which are more attractive to fish in both lakes and streams, than the "average" water and it is these "hot spots" that the less fortunate group must seek out, just as do the "experts" in order to increase their fun astream.

It would probably be well at this point to explain what constitutes a "hot spot" and how this differs from the other water.

A "hot spot" is where fish normally gather to live. These are: sunken logs, stumps and snags, waterfalls, slate ledges and gravel bars, undercut banks, weedbeds, lily pads, deep holes, entrances of cold feeder streams, boulders, backwaters beside fast currents,

eddies and coves off main part of lake or stream, ad infinitum. At these locations, fish find the necessities of life: food, shelter, and comfortable temperatures. Fish seek out and live at these locations and rarely wander very far except during times when there is an extreme fluctuation of water brought about by storms and drought.

These are the spots that experienced anglers search for as they travel the stream, or drift along lake shores in boats. It is here where the expert pauses to fish, passing up all the unproductive or "average" water between.

By finding these locations, then wading or boating carefully into casting position, the fisherman is going to have fun, regardless whether expert or novice.

To better exemplify so called "hot spots" study the series of illustrations showing "white silhouette" fish in the most logical locations. Glance first at picture marked No. 1.

Snags and fallen trees attract bass and big trout. The limbs cast shadows on the bottom, breaking up the outlines of the fish themselves, and give them a sense of security. Insects fall from the limbs above water, minnows hide among those snags that are submerged, hence large fish find a ready source of food.

Wade into position carefully, without too much disturbance, and drop your baited hook, weedless spoon or popper-fly near the snags. Try several baits if one fails. Of course, fishing among snags is sometimes costly, with much tackle—hooks, sinkers, lures, leaders and parts of lines, lost. But to catch fish you must condition yourself to the fact that some tackle is expendable.

When a bass is hooked, if possible, lead it away from the snag-filled water and let it fight it out in more open water.

Hot spot No. 2 shows slate ledges bordering a deep pool. This is a perfect spot for smallmouthed bass. These fish are instinctively attracted to gravel and rocks and upon finding such an attractive spot, they will rarely move on. These slate ledges provide shelter and a ready supply of crayfish and hellgrammites as food. Both trout and bass will move into the riffles at the head of this pool toward sundown. Above all, don't walk up to the edge of the rocks and drop the bait into the water. You will be in the range of the bass' vision. Better to pause several feet from the edge and remain out of view as the bait is dropped over the ledge. Or, try the opposite shoreline.

A waterfall is a natural for trout. The tumbling water is aerated and charged with fresh oxygen which trout require. Patches of foam floating overhead in the pool provides shadows on the bottom and obscures vision into the pool, giving trout a feeling of security.

Look for trout at the edge of the white water and to each side. If the pool is deep, most likely the trout



HOT SPOT NO. 1 shows snags and sunken tree. Fine spot for bass.

will be close to the bottom unless they are surface feeding. A bit of lead attached to the line will sink the bait into position.

Hot spot No. 3 shows a submerged log near shoreline. When water is moderately deep, bass and trout will harbor near a sunken log. Cast your bait or lure three-quarters upstream and permit the current to drift the bait past the log. Also drop a bait in front

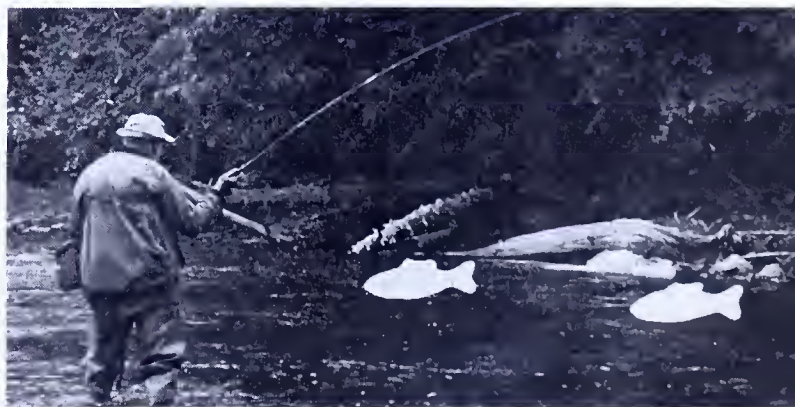


HOT SPOT NO. 2 shows ledges beside deep pool. Excellent pool for smallmouthed bass.

of the patch of foam, for fish frequently lie just beneath, waiting for food that is being washed downstream to lodge into the foamy bubbles.

Any fish in the immediate vicinity of this photo will normally live close to the log. And it was no coincidence that immediately after this photo was snapped, the angler caught a husky smallmouthed bass on a hair-bug that quivered on the surface. The bass

HOT SPOT NO. 3 shows sunken log and patches of foamy bubbles. Excellent for smallmouth.





HOT SPOT NO. 4 shows weeds and weedbeds. This is the home of pickerel.

zoomed out from under the log and smashed the lure as though its life depended upon getting it.

Hot spot No. 4 shows grass and weedbed. This is a natural spot for pickerel. These savage marauders prefer to lurk near weedbeds and lily pads in both lakes and streams. The weeds give them an opportunity to hide and lie in waiting for their victim. And food is plentiful here. Frogs and minnows harbor in these weeds so pickerel do not have to work hard nor wait long for a full belly. Cast the bait or spoon



HOT SPOT NO. 5 shows a hidden rock in the fast current. Look for trout here.

in the open water in and around weedbeds. Any pickerel in the immediate vicinity of this spot will be right there near the weedy growth.

Special lures have been designed for fishing weedy locations. The weedless spoon, plugs with weedless treble hooks, and the surface plug are ideal. With these there is less chance of getting fouled on this vegetation.

Hot spot No. 5 shows rocks and boulders in current. This is the perfect spot for trout. Brook, brown and rainbow trout prefer the swift water to calmer portions, but they like to hide behind obstructions such as rocks and boulders which break the flow of the current. Here they can stay, without regard for the fast water and watch for food swirling past them.

Permit the current to carry your bait down stream past this hidden boulder. If you are working a dry fly upstream drop the fly in front of the rock and let it float with the current. There is certainly a good chance of one or more trout lurking in this spot, so

work it carefully and with patience.

Hot spot No. 6 shows an undercut bank. Trout like to lurk in the shadows and remain hidden during the day. What more appropriate spot could there be for hiding than an undercut bank. Here the trout can wait during the sunshine hours but dash out and grab food or a baited hook that is drifting past the lair. This is a choice location for lunker trout, the kind that often puts a permanent kink in your rod from the tough strain of fighting to land it.

To fish open water between the banks is generally useless when such an undercut bank is readily available. Concentrate your time near the bank, passing up the open center portion. An inexperienced fisherman will usually work the center and draw a blank, while an "expert" coming behind will hook and land a husky trout simply because he spotted the undercut and worked his bait accordingly.

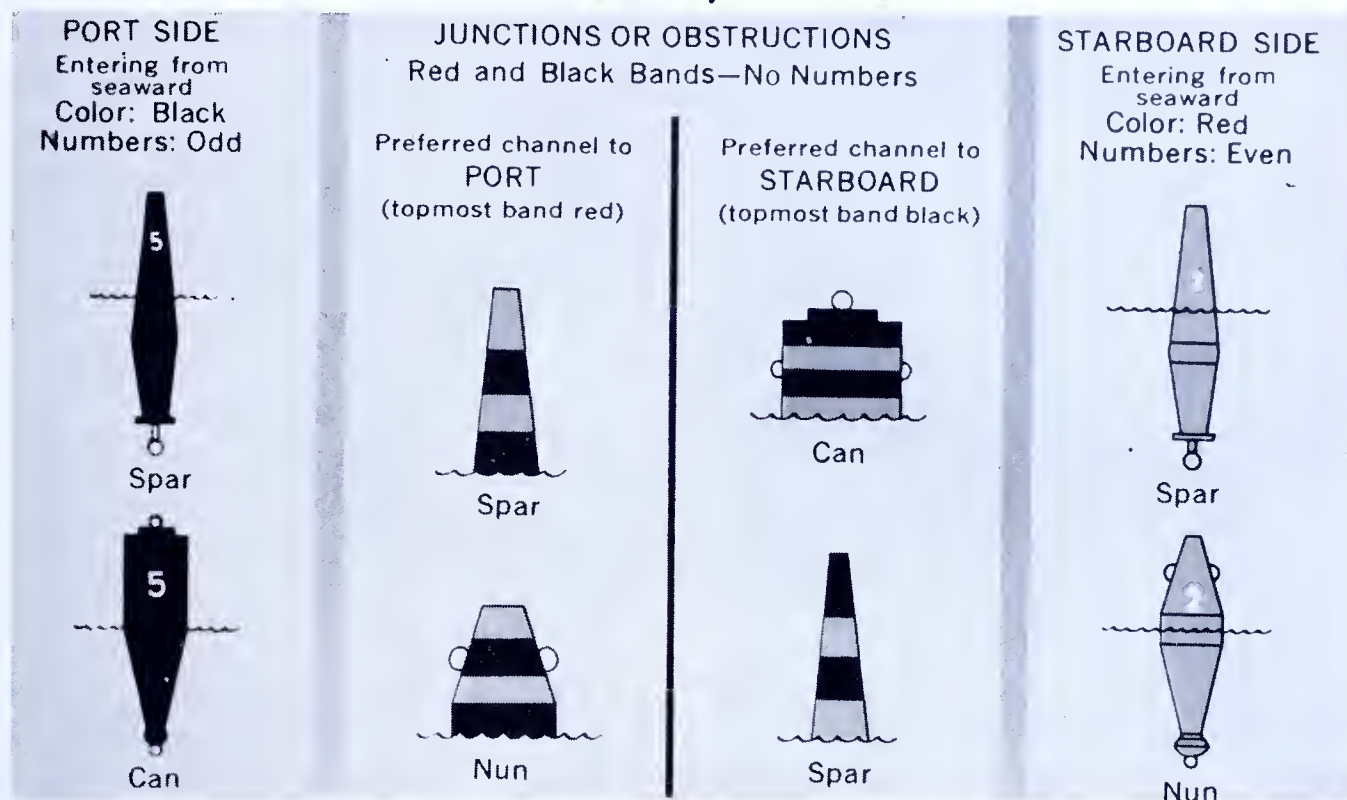
These six examples of "hot spots" are found in all streams in Pennsylvania, or for that matter from Alaska to Florida. They will serve as a guide when looking for productive spots in both lake and stream. By concentrating your effort at these spots and not wasting too much time on the shallow, open water, more fishing fun is had; more fish will be caught. Reading the water pays dividends. And when such locations begin to pay off for you, stay with them. Try each time you pass through the region of water, for when one lunker is caught, another will soon move in. If it is attractive enough for the first, it will remain the same for the next one passing through the vicinity.



HOT SPOT NO. 6 shows an undercut bank. Lunker size trout live here.

Make it a point to study the streams and lakes more carefully. Find the hot spots. Concentrate fishing there. By the end of the season you will be able to tally up more and larger fish. The other 10 per cent of the fishermen won't be catching the 70 per cent. You will be represented, edging the percentage of successful anglers higher to 11, 22, 44 or even 66 per cent. And then remember, not to kill every fish you catch in these hot spots. That's the surest way to make the hot spots as barren as the other, less attractive spots. Release some of the fish carefully, if only the smaller ones, so these hot spots remain "hot" and not just lukewarm!

Familiarity with Buoyage Systems Can Make Better, Safer Boatmen



HERE ARE the most common buoys which you will encounter as channel markers when boating. Knowledge of these visual aids or "road signs" of boating will help make you a better and more competent boat captain.

Any boatman can become better, safer and more confident by familiarizing himself with the buoyage system of his locality, by having a supply of charts of the area in which he does his boating and by knowing how to read these charts.

Government spends a good deal of money setting out and maintaining visual aids to navigation, according to Everett B. Morris, author of the Evinrude Boating Foundation publication, "Outboard Boating Skills."

The visual aids to navigation take the form of buoys, beacons and lighthouses, and published charts which show their location with relation to rocks, shoals and other hazards. Charts are essentially the road maps of boating.

The thing to do is learn how to read a chart and understand the meaning of all the symbols it contains. Any old hand at the boating game will be glad to teach you. You should then govern your movements on the water accordingly.

On federal waters, where the Coast Guard has the responsibility for keeping buoys in position and in working order, the system is the same whether you are on the east or west coasts. Some states have their own marking methods for purely inland waters, and some municipalities have private variations of the basic theme. You should learn these local variations if you are going to boat in the area.

However, most localized systems usually follow the basic rule: the three r's of piloting—"red light return-

ing." That's an easy way to remember that, upon entering a harbor or channel from seaward, red buoys are kept to starboard, or the right.

Conversely, of course, when leaving a harbor and heading seaward, the red buoys are then to the left.

Fundamentally, there are four types of buoys in the federal system; nuns, cans, lighted buoys and sound buoys (gong, bell, whistle). Conical shaped nuns, painted red and carrying even numbers, mark the starboard side of the channel. The cylindrical can buoys, painted black and carrying odd numbers, indicate the port boundary of the channel entering from seaward.

Lighted or sound buoys may be painted either color, depending on their use, and sometimes are combined into lighted bell buoys and such. The bells, gongs and whistles are to help navigation in poor visibility; lights to facilitate movement by night.

Once accustomed to the buoys and their purposes, they are as easy to read as road signs, which, in effect, they are. For instance, combination red and black buoys with horizontal stripes indicate obstructions or channel junctions, with the top band marking the best channel (red top, channel to left—black top, channel to right). Vertical striped black and white buoys mark mid-channel points.

The buoys are put there for a purpose and the good boatman doesn't take chances, or pretend to know more than the folks whose job it is to put the buoys in the right places for his safety.

Snapper Snatchin'

by ELDY JOHNSTON

Photos by the author

Anyone chancing to observe Bill Boyer of Dravosburg on that hot September morn in Brush Creek, near Mt. Pleasant, would have been inclined to wonder. If they had tarried to watch his antics for another



A LIKELY SPOT, as Bill Boyer probes a hole in the mud bank of Brush Creek.

15 minutes, they would have probably walked away muttering, "poor fella, a real sad case."

Now there's nothing wrong with a man plowing down a stream in kneec-deep slimy mud and suddenly dropping flat as he plunges his arm up to the shoulder in each hole in the bank. Not if he is hunting snapping turtles barehanded, that is. That's exactly what Bill Boyer was doing and has been doing, off and on for forty years.

HERE, BILL has the bull, er the turtle, by the tail.



We went along to lend our moral support. We, being Jim Sabin a local sportsman-businessman who frequently covers outdoor activities for TV, Paul "Moon" Robis, who had volunteered to carry the empty sack, and the writer.

Boyer had offered to provide the Dravosburg Sportsmen's Club with the ingredients for a turtle soup party; we were anxious to see how he managed to capture the ill-tempered, dangerous critters alive. That's why we had made the trip to Brush Creek, a small stream that passes under Route 31, near Mt. Pleasant. A few years previous, our turtle hunter and several companions had taken 17 snappers from this same stream.

Boyer's equipment was nothing elaborate, old pants and shirt, tennis shoes, burlap sack and a steel rod



"MUST BE a twenty pounder," says the hunter as he admires his prize.

about two feet long with a hook on one end to probe the deeper holes. After a day in the mud Bill usually threw his hunting clothes away, probably at his wife's suggestion. Optional equipment would include a piece of light rope to pass between the snapper's jaws and tied behind to render him non-combatant. Before the day was over we discovered that it took plenty of nerve and a bit of know-how to be successful at this game.

Bill Boyer is a very active and agile man belieing his 59 years and it kept us jumping to keep abreast of him as he plodded through the murky water searching the banks for telltale turtle signs. His first catch was a small bluegill which was carefully restored to the water. Shortly afterward he stood up grasping a

violently squirming water snake about a yard long. "Just a harmless water snake," observed Jim, as we grabbed for our cameras. "Well somebody should have told him he was harmless," yelled Boyer as he whipped the thoroughly aroused reptile against a convenient tree, at the same time exhibiting a hand bleeding from several dozen prick-like wounds.

We had almost decided that our hunter had cleaned the creek out on his previous visit when he finally located one burrowed deep in a tunnel-like hole at the water's edge. Seizing it by the tail and one hind leg, a short-lived tug-of-war began as the startled turtle dug into the mud with his long curved claws. Tossing him out on the bank Boyer said, "put him in the sack." Moon bravely picked it up by the ridged handle-like tail, as I held open the narrow mouth of the sack. All went well until the angry victim slashed out with an audible snap of those powerful jaws. Moon promptly dropped the turtle, I dropped the sack and we both took off.

In short order we picked up several more, one a nineteen-pounder as mean as he was big. Although they are toothless, Bill showed us how those sharp-edged powerful jaws could crush a stick an inch in diameter. Robis had been instructed to hold the now-heavy sack away from his body to prevent getting nipped through the burlap. We couldn't resist the temptation (there's one in every crowd) to sneak up behind him and give him a playful pinch on the leg. Moon yelled and gave an impromptu dance that would have done justice to a professional hoofer.

There are doubtless easier and safer ways to gather snapping turtles; hook and line and traps of various kinds but Boyer prefers his bare-handed style of the finding, feeling and pulling method. The saw-toothed rear end of the upper shell makes it easy to locate the tail. If you make a mistake, you find out quick-like. "Never been on the wrong end in 40 years of turtle hunting," claims Bill, admitting however that he saw a couple of buddies get chewed up pretty good. The only thing that bothers Bill a little, is muskrats. Grabbing one of those females with a nest of young by mistake can be right embarrassing.

About this time buddie Bill tried to induce me to catch one, "just for the experience," he said. "They most always go in head first," he assured me, "unless two go in the same hole and one gets turned around." That little bit of doubt was enough for me for I had no intention of losing my trigger finger or any of its buddies to an unfriendly snapper. The numerous muskrat tracks around most of the holes was a clincher. I decided to remain a curious onlooker.

Chelydra serpentina is a rather pretty name for such an ugly, mean-tempered individual as our northern snapping turtle. Their top shell is rough and their under shell is so small that it affords them little protection. However, their huge heads and powerful jaws, which can easily snip off a finger, more than makes



"OOPS!! made a mistake," exclaims Boyer as he comes up with a squirming water snake.

up for this weak spot in their armor. Aside from fellows like Boyer, the snapper has very few enemies. They will eat almost anything, including fishlife and the young of game birds and waterfowl which tends to make them unpopular with the sportsmen. The female snapper lays her eggs in a hole in the ground and the sun does the incubating. When the young scratch themselves to the surface, they are on their own. When cold weather arrives they hibernate in the mud.

After several hours of searching, Moon's sack held three turtles and was getting difficult to hold away from his body as we pushed our way through the thick growth that bordered much of the creek. He had dropped behind the rest of the party some 50 yards, when we heard him yelling for assistance. "Do you want us to help you catch him?" called Jim, thinking one had escaped from the sack. "No! no!" was the instant reply, "hurry up and help me let him go." It developed that one of the snappers had grabbed a mouthful of burlap and Moon's trousers in a playful gesture, which was not at all appreciated by his captor.

It was after noon when we arrived back at the at-

HERE'S ONE snapper that will prey on no more fish.





A TRIO of snappers getting "dressed for dinner."

"IT WAS worth the trouble," says Chef Boyer as he samples his concoction of turtle soup.



tractive Boyer residence in Dravosburg. Bill's wife, a school teacher who doesn't exactly encourage her husband's hobby, was out, fortunately. The first step was to behead the three snappers and to hang them up in the yard to bleed for an hour. Moon insisted on holding the tail of the one that had missed his leg but had injured his dignity, as Bill applied the tranquillizer, a razor-sharp axe. The turtle nearly won the last round however. Noting the harmless-looking head on the ground Moon poked a pencil at the gaping jaws. There was a crunching sound as the horny jaws crushed the pencil, almost including Moon's digit in the process.

Bill had put a large pot of water on the fire and when it was boiling he placed each turtle in the pot for about a minute. Then, working quickly, he peeled all the scales off the shell and body, transforming the mud-colored snapper into a glistening white. Final dressing included the removal of the entrails and the brownish fat similar to that found in a woodchuck. For the first time that day we admitted that a snapper looked appetizing as the disjointed portions of pinkish-white meat were placed in the now-white shell and wrapped for storage in the deep freeze. Up until that time I for one, was trying to think up an excuse to be absent from the turtle soup dinner.

There are no doubt, various ways of preparing turtle soup but here is Bill Boyer's favorite recipe. Use the shells for stock then boil the portions of turtle in a bag to prevent them becoming stringy. Remove and dice. Add celery, onions, a few potatoes, ripe tomatoes, carrots, bay leaves and season well. The result is well worth the trouble, claims Bill, and his friends will back him up.

"Snapper snatchin!" with the bare hands is a lost art, say some of the old timers and after seeing how it's done, I'd like to add a fervent "NO WONDER."

Dog Food Fishing

You may never watch a bass or trout feeding out of Fido's bowl by the doghouse; but if fish had any choice in the matter, they'd gladly share Fido's daily repast.

This may sound like the beginning of a shaggy dog story, but the fact is, fish become real chow hounds around dog food. The Mercury Outboard Company suggests that when all else fails, and your favorite fishing hole just won't produce any more, a few cans of dog food in the bait box may be the answer to the angler's prayer.

Here's how it works. As you cruise around the lake, look for likely hot spots where the fish should be but "ain't" . . . maybe that patch of weeds across the way or the inlet on the north shore . . . an old pier, a

sunken log or scrub trees growing along the water's edge are other promising places. Punch a few holes in a can of dog food and drop it overboard at each location. Make a mental—or written—note of the spot and then call it a day. The real fun begins the next morning.

During the night, the dog food will slowly seep out of the can and all kinds of small aquatic life—minnows, crayfish and insects—will congregate for the free lunch. Then, the game fish will move in for their own kind of buffet.

When you return the next morning, chances are you'll have a creel full of fish before the sun gets very far above the horizon. The only thing you have to worry about is when the fish start barking.

It's a Complex Business—

By WILLIAM VOIGT, JR., Executive Director

Pennsylvania Fish Commission

(Editor's note: This the third and concluding installment of this article, which has been written as a proposed chapter in a textbook being compiled by Senator Israel Stiefel of Philadelphia on the broad political science subject of "State Governance" in Pennsylvania.)

PART III

THE PENNSYLVANIA FISH COMMISSION

Boating Responsibilities

The Fish Commission has had power boating responsibilities on the inland waters of the Commonwealth since 1931. This apparently came about by reason of the fact that in those earlier days most of the power boating was done for fishing purposes. People like to fish larger waters from boats, and the development of good outboard motors through the years made mechanical propulsion popular. As still better motors became available, in larger but still compact and relatively quiet forms, and as boats also improved, pleasure cruising and water skiing grew in popularity and in availability to the average boater. Fishing is the chief reason why people buy boats and motors in Pennsylvania, but use of boats and motors for purposes other than fishing or with fishing taking on an incidental role, appears to be climbing rather rapidly for the state as a whole.

This evolution has added to the complexity of the task imposed upon both the Commission and the staff. The power boating functions are supported at present by a law that provides for the licensing of boat motors at a rate of \$1.00 per cylinder. This revenue goes into the Fish Fund and, although the law does not now so specify, it is clear that the General Assembly intended that the money should be used for services to and control of boating of all kinds, and this has been the case.

However, by the nature of things, many of the activities of the Commission as they relate to both fishing and boating must be combination activities. It certainly could never have been the intent of the Legislature that a fish warden, while patrolling a body of water, should ignore fishing while being watchful over boating, or vice versa. Nor could it conceivably have been the intent of the General Assembly that an access



PICNICKING AND FISHING form a great combination. Here a fisherman casts a line, while the others leisurely enjoy a basket lunch.

area on a river bank, with parking lot and boat launching ramp, might be used only by pleasure boaters if there were fish in the water to be caught from a boat, or vice versa. This intermingling of activities has made it exceedingly difficult to prevent a certain measure of merging of costs and units of time expended by personnel having combination functions and responsibilities.

Current laws and revenues have been considered by the Commission as being wholly inadequate to the total task to be accomplished, and as this was written (in the summer of 1959) a new water safety bill was before the General Assembly for attention. Its enactment would probably make necessary a revised organizational structure providing for an assistant executive director for boating, to be responsible to the executive director in the same manner as is the assistant for technical fish matters.

As with fish management, the Commission has taken the view that its chief responsibility on boating has to do with policy, and the actual administration and enforcement are left largely to the staff.

Important Incidentals

In an earlier era, less crowded with humans and all the things that the industrial eruption has brought, a man dug a few worms, took down his cane pole and went fishing in the nearest stream or pond, and there was nothing except his conscience or the exigencies of making a living to stop him. Now? There are "no trespassing" signs galore. Railroads and highways parallel



ACCESS AREA on Juniata River south of Mexico, Juniata County.

the streams, cutting off access. Along the banks of the rivers and creeks, and around the shores of the lakes and ponds, the places where his footpaths ran are now the sites of summer cottages, year 'round homes, service businesses catering to the needs of the countryside, even factories.

Consequently, the Fish Commission has been more or less forced into what once might have been considered an unnecessary frill or sideline. This is the provision of free public access to waters that may be fished if they can be reached without trespass. Providing such areas means real estate acquisition or leasing, and engineering, construction, and maintenance. The areas, when developed, usually consist of an access road from the nearest public highway, a car

SIGN ANNOUNCING access area on Fairview Lake in Pike County.



parking lot, a boat launching ramp where the waters are suitable for boating use, and minimum sanitary facilities. With something like 1,200 miles of fishable rivers and large creeks in Pennsylvania, the Commission has a hard, busy schedule ahead if it is to provide needed access in a reasonable span of years. River front communities that own or control lands abutting the water, are now being enlisted in this venture, on a cooperative basis.

Likewise, the Commission has sought to remedy the gradual shrinking of the amount of fishable water available per license buying person, by the construction of new fishing lakes, where the terrain lies properly, and where other conditions, including land costs and water quality are favorable. By policy, the Commission does not now build lakes smaller than 50 acres in extent, and it encourages township zoning and building codes that will assure clean, desirable surroundings that will remain attractive for family-type recreation. The Commission may find it desirable to build even smaller lakes, in time.

Since lakes in private hands tend to become closed to the public as private development occurs, the Commission keeps alert for lakes that are placed on the market at prices that appear reasonable. These may be natural or manmade lakes, but most often prove to have been manmade, often for industrial purposes that have become outmoded, but may be of recreational value.

The lake building and acquisition program has been assisted by the Federal Aid to Fisheries Restoration law, the so-called Dingell-Johnson Act. Under this law, revenues from a federal excise tax on certain items of fishing tackle are apportioned under a formula that takes into account the numbers of fishing licenses sold in and the geographical area of each state. While the funds allotted may be used for a variety of purposes, the Fish Commission has found it desirable to utilize its share for lake construction, since there is much need for this kind of development; the only parts of Pennsylvania where natural lakes are found are the glaciated areas of the northeast and northwest.

A field in which the Commission sometimes with the assistance of local sportmen's groups, has been successful in increasing the total available fishing water, has been that of the public water supply reservoir. By entering into cooperative agreements involving restrictions agreed to as legal and reasonable by the Office of the Attorney General, the operators of some of these reservoirs are willing to open them to public fishing; generally the reservoirs opened are those where the water is both filtered and chlorinated before it is delivered to the community for drinking purposes.

Educational efforts, to inform the public as to what the agency is doing and why, are an accepted facet of Commission activities. Currently, these include the publication of the Commission's official monthly magazine, THE PENNSYLVANIA ANGLER, the prepara-



LOWER WOODS Pond in Wayne County owned and maintained by Fish Commission.

tion and distribution of booklets and pamphlets, the issuance for sale of large scale county maps showing roads and fishable waters, the preparation and showing of color-sound slide lectures on various aspects of Commission work, the construction and use at fairs, sportsmen's shows and elsewhere of exhibits of live fish and related things, and the issuance of frequent news stories on all phases of Commission activities.

Collateral Activities

Ex officio, the executive director of the Fish Commission sits on two important Commonwealth boards. These are the Sanitary Water Board, which passes on matters having to do with water pollution, and the Water and Power Resources Board, which deals with matters relating to diversion of water from streams for public water supply, stream channel changes in connection with highway and bridge construction, encroachment on watercourses, dam structures, and the manipulation of waters impounded thereby.

It is readily apparent how vital these activities are to the fishery of the Commonwealth. By reason of that membership, it is feasible for the Commission to have a voice in policy decisions affecting fish, and to collaborate with other state agencies toward the evolution of improved techniques and policies for the benefit of the streams and the fish life they contain. Two instances of this appear significant enough to be described.

In one case, initiated during a meeting of the Sanitary Water Board, it was possible to bring about a joint field investigation by men from the Commission and from the Departments of Health and of Mines and Mineral Industries, with the result that old stripped out coal areas were found near the headwaters of three streams that were on the borderline of fish productivity. The outcome was that the Department of Mines and Mineral Industries, utilizing funds available for such work, backfilled the areas in a manner expected to halt the flow of acid waters, and restore

the streams to a point where they may carry fish the year around. This is expected to become a continuing program.

In the other case, through consultations initiated at a meeting of the Water and Power Resources Board, discussions were had with the Department of Highways that resulted in the setting of entirely new standard operating procedures in connection with channel changes affecting fishable streams. The Department of Highways now requires contractors to construct V-shaped low flow channels at bridge crossing and other places, instead of the formerly standard wide, flat channels. The low flow channels permit the waters in dry periods to flow into the Vs bringing greater depth, cooler temperatures, and improved fish habitat. The Department of Forests and Waters readily agreed to do likewise in connection with flood control work.

Close liaison is maintained with the Game Commission as well as the Departments mentioned. There is collaboration annually between the fish wardens and game protectors in law violation work. Where fishable waters are located on Game Commission lands, they often are under the jurisdiction of the Fish Commission for fish management purposes. The Fish Commission also has a standing arrangement for fish management in the lakes on state park lands administered by the Department of Forests and Waters. Stream improvement work, to provide better fish habitat and more interesting fishing conditions, is carried out by the Fish Commission on both game lands and state forests.

Liaison is maintained with the U. S. Fish and Wildlife Service on a variety of activities involving fishing waters, with the Army Corps of Engineers on river basin flood control and related matters, and with the Department of Agriculture's several agencies, chiefly the Forest Service and the Soil Conservation Service.

VIRGIN RUN Lake in Fayette County. Public fishing lake constructed and maintained by the Fish Commission.



on soil and moisture conservation subjects and programs.

Cooperation is had with agencies of the adjoining states in the fixing of uniform regulations for boundary waters. There is collaboration with other states, the federal government, and Canada on fishery research and management for Lake Erie.

The executive director is ex officio a member of the Atlantic States Marine Fisheries Commission, a committeeman in connection with activities of the Interstate Commission on the Potomac Basin, and customarily is active, with numerous other commission

personnel and Commissioners, in organizations having a bearing on fish management, such as the American Fisheries Society and the International Association of Game, Fish and Conservation Commissioners. Liaison must be and is maintained with numerous citizen organizations with an interest in fish resources and their proper management.

In the aggregate, these consume considerable time, effort and manpower, but by one means or another, directly or indirectly, they contribute to the sum of public fishing opportunity, which after all is the main modern reason why a Fish Commission exists.

ANGLER QUIZ

By Carsten Ahrens

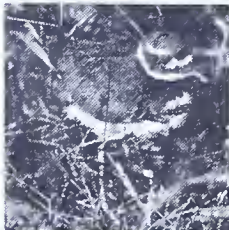
Your Neighbors While Fishing

You Won't Fish Long Without Meeting These BIRDS

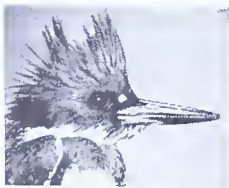
- A. Wood Cock
- B. Killdeer
- C. Red-winged Blackbird
- D. Kingfisher
- E. Great Blue Heron
- F. Semi-palmated Sandpiper
- G. Screech Owl
- H. Herring Gull
- I. Osprey
- J. Coot or Mud Hen



Wood Cock



Killdeer



Kingfisher

- 1. Nobody seems to know just why, but this bird has two phases: the reddish-brown, and the grey.
- 2. Large birds, white with black wing tips. They are scavengers.
- 3. Small greyish birds that travel in compact flocks. Their toes are somewhat webbed at their bases.
- 4. Birds that call their name, day and frequently at night. They have two noticeable rings around the neck.
- 5. Rich brown, roundish, clownish birds with very long beaks. Nocturnal and crepuscular.
- 6. Not too well named. Greyish in color with long black legs and yellow bill. Nest in colonies. Head drawn in in flight.
- 7. This one can be easily distinguished as it flies overhead, for it is our only hawk-like bird with white underparts.
- 8. A blackish, duck-like member of the Rail family; whiteish beak.
- 9. Dark birds with a scarlet patch on either wing. They are often seen chasing larger birds that happened to approach the nesting area.
-10. Greyish-blue birds with one band around neck. Large head, heavy beak, loud call. They nest in tunnels.

ANSWERS

G-1; H-2; F-3; B-4; A-5; E-6; I-7; J-8; C-9; D-10.

Tipsheet Available for Sportsmen

"Soil Conservation Tips for Sportsmen" is a new U. S. Soil Conservation Service publication which should be read by sportsmen, the Wildlife Manage-

ment Institute reports. The illustrated tipsheet shows practices that will benefit fish and game. Request it from the SCS, USDA Building, Washington 25, D. C.

HEADWATER

By W. O. NAGEL

The little pool stretched out its 50-yard length invitingly, between a wide gravel bar and a steep, tree-and-brush fringed bank. The water was so clear I could see the gravel bottom, except where the cut-bank cast its shadow. There didn't appear to be a fish in it—but I knew better. I knew, too, that there were deep pockets along the far bank, and several large boulders—just where a smart fish would hide.

And these fish were smart, just as all fish in small, clear-water pools are smart about not showing themselves to humans. Especially to noisy, gravel-crunching, loud-talking, boot-stomping humans. A fisherman could walk out on that gravel bar (it offered a nice, clear space for a cast into the far-side pockets) and fish all day, without seeing a fish or having a strike or a bite. In fact, I'd seen them do it—many of them, and I'd done it myself. And, like other disgruntled fishermen, I'd sworn there wasn't a fish in the pool.

But one day I got a notion. Maybe I remembered something I'd read, or something I'd heard; maybe it was a recollection of how I used to fish when I was a youngster and had plenty of time—before I matured into the hurry-hurry-hurry pattern of grownup life. Anyway, this day after I'd cast an assortment of favorite "sure-killers" thoroughly (and sometimes quite skillfully) over every foot of that pool, without results, I suddenly decided to sit down and think it over. So, in the shade back in the woods I thought it over through two cigarettes to an idea. I'd be real quiet, out-of-sight, for about a half-hour. There'd be no other disturbance. Taking just my rod, the fly replaced with a small hook, I walked quietly down about a hundred yards below the tail of the pool, well back in the woods, crossed the stream at a shallow riffle, and started back along the steep bank side. I kept out of sight of the water, moved very quietly, stopped just once to clip a grasshopper off a stalk and slip him, uninjured, in a small box. When I came opposite the sycamore that marked the location of the deepest hole and a huge submerged boulder, I dropped the rod and, on hands and knees, crept stealthily up to the bank. At the very edge, I parted the backbrush slowly, inched forward till I could see the water below.

Looking almost straight down, I could see into the shadowy water. And what I saw—well, a fair-sized squirrel could have popped into my mouth without touching a tooth. Bass—not one, but three—no, by golly, five!—hung suspended around the boulder, or drifted like torpedo shadows among a half-dozen or so smaller shapes which were goggle-eyes.

I watched, frozen in stillness, while they floated or paraded, sinking down out of sight, then rising up near the top, all seemingly without a fin-flick, and all without a ripple on the surface. Then, moving as slowly as cold sorghum, I worked the grasshopper into my palm and thumb—flicked the kicking insect into the pool. All the drifting shadows froze, while the hopper made about three kicks. Then, faster than thought, there was a dart, a small splash, and the hopper was gone.

What then? Why, then I inched back out of sight, and got another grasshopper. I did the hands-and-knee return, and flipped this grasshopper out, too. Only this time he was on a hook. I was too far back to see what happened, but I heard the splash and saw the tightening line and felt the tug, and then I came out in the open to land my fish. Not the biggest of the drifting shadows, but a right nice bass.



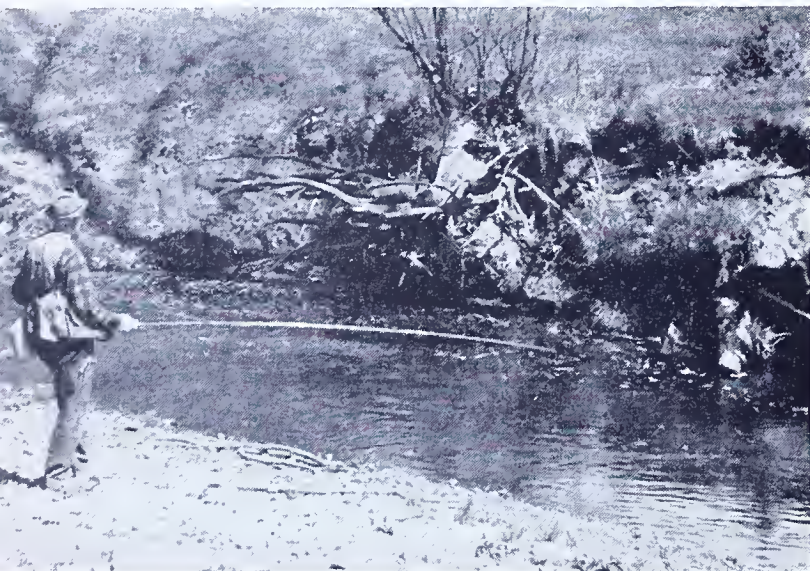
LOOKING ALMOST straight down, I could see into the shadowy water.

When I had him safely on the stringer, I went back to the bank and peered over again. No torpedo shadows, this time—just the shadow of the cut-bank, and stillness and dark water. But I wasn't worried; there were other pools, and more grasshoppers.

That, with variations, is how I learned to fish the clear-water headwater pools. It's how I learned that though fishermen say (and believe) these tales about there being no fish here, or that the pools are fished

out it isn't always so. In fact, if there's water enough to conceal fish, it is very seldom so.

I like lake fishing very much, and do a lot of it. But one extra nice feature about streams; they all have headwaters. That's not a very easy term to define in terms of size or depth or length of stream; the best definition of headwaters I've found is, the stretches of stream above the point where most fishermen go. Size is really no criterion. I've followed a narrow stream averaging 6 to 12 inches deep for a half-mile, then caught a whole mess of big, lusty green sunfish out of a crevice in the bedrock no bigger than a bathtub and about as deep. I've caught several strings of nice largemouths and channel cats out of tributaries



THE VERY nature of headwaters calls for different techniques.

to streams themselves considered too small to hold worthwhile fish. In fact, nothing attracts me to exploration so much as a stream that's so small and shallow it just can't hold fish, oftener than not, there's going to be a pool up around the bend, or down past the long riffle; and, oftener than not, that pool holds more than a few sunfish—you'd be surprised at the nice bass that stray into these headwater pockets.

Of course, the very nature of headwaters calls for some different fishing techniques. You can't walk right up to (or into) the small pools like you can the big waters; you approach them cautiously, and if possible fish from behind cover. It's doubly important, here, to wear clothes that blend quietly into the surroundings to step into the water only when you must, to free a hung-up lure or to keep from having to detour

around a bluff, or to wade a shallow place till you can reach a deep pocket with your bait or lure. Where there's no cover, stand back as far as possible and still reach the spot: often I've cast over more ground than water to keep from getting close enough to scare the fish.

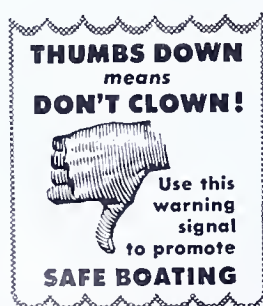
Never walk the bank over a deep pool till you've fished it from a distance. Never pass up a deep pocket around a rock or a stump, even if the water all around the pocket is so shallow you can see all the bottom. The biggest smallmouth I ever saw lived for years in a pool in Indian Creek, in just such a set-up. I found that out by one of those sneak-up-and-look trips, and watched him cruise along in clear water that looked no more than knee-deep to sand bottom. There was a stump out about 20 feet, and the current had scooped out a hole here, not bigger than 3 by 10 feet, where I couldn't see bottom. Just the slightest move, and he'd be in that hole like a flash. Every time I saw him he had a pal with him, about a third shorter. I never fished for "old George" but a friend of mine did—at dusk, using the grasshopper-flip trick. He didn't get George, he got the small one. Small One was 19 inches long—so figure Old George's length from that!

Since then I've never passed up these occasional pockets in shallow areas, and I've been rewarded quite often.

Another thing about small waters: flyrod with flies or natural baits work much better for me here than the larger lures. When brush or trees are too thick to permit casting, I use the flyrod like a cane pole, generally using natural bait. These headwaters clear up before the lower reaches, generally, but even so you'll often find them murky or downright muddy especially in farmland country. Then I always use bait, and still-fish. The secret here's to find a deep hole, and a comfortable place to sit, in sun or shade according to the day and your desires. It's a lovely, lazy way of fishing—a nice change from the hard, stumble-footed, brush-scratching, rod-tingling walking you do when waters are clear and there's always a better pool and a bigger fish just around the bend.

If you like variety in your fishing, enjoy your own company, and are willing to prospect through many failures for the sake of many nice "strikes," I suggest you try headwater fishing. There's lots of room, and it makes a very nice change.

—Missouri Conservationist



Mercer County Junior Conservation Education Camp

by C. PAUL BLAIR



Front row—Kneeling

Left to right

- | | | |
|----------------------------------|--|--------------------------|
| 1 David Shrawder, West Middlesex | 4 *Terry Bowman, Farrell | 7 Leo McKay, Mercer |
| 2 Gary Morrison, Sandy Lake | 5 *Danny Ristvey, Sharon | 8 Edgar Cole, Grove City |
| 3 Lewis Ritenour, Grove City | 6 Thomas McCarl, Grove City (*Junior Counselors) | 9 Carl Sorg, Fredonia |

Back row—Standing

Left to right

- | | | |
|------------------------------|-------------------------------------|--|
| 1 Gilbert Davies, Grove City | 6 Leroy Woods, Jackson Center | 11 Neil Stallsmith, Sheakleyville |
| 2 Leslie King, Sharon | 7 *Leroy Gathers, Sharon | 12 Robert Wilson, Grove City |
| 3 Dennis Krofcheck, Mercer | 8 Charles Holler, Sharon | 13 James Dunkerly, Grove City |
| 4 Paul Adderty, Sharon | 9 Jack Baldrige, Transfer | 14 Daniel Dunn, Sharon |
| 5 Andrew Bartosh, Farrell | 10 Rodney Ott, Farrell (*Counselor) | 15 *A. T. Biondi, Mercer (*Game Protector) |

The Mercer County Council of Sportsmen's Clubs conducted its first annual Conservation Camp for Juniors this year. The camp was organized under the chairmanship of Mr. Allen Morris, of Transfer, vice president of the Council. Members of the Camp Staff included: Leroy Gathers, senior counselor, Hermitage; Danny Ristvey, Sharon, and Terry Bowman, Farrell, junior counselors. Ristvey and Bowman previously attended the Junior Conservation Camp conducted by Penn State University. The purpose of the camp was to educate our youth in good conservation practices and to provide a caliber of boys having a deep desire for more knowledge of resource conservation. Through friendly competition with other boys of the same age, they seek to attend the Junior Conservation Education Camp at Penn State University, State College, Pa., next year. The boys were selected originally by the affiliated clubs of the county. To be

eligible they had to be students of either the eighth or ninth grades of the 1958-1959 school term. The boys with the highest grades at the end of the camp period thus being eligible for entry in the state-wide conservation camp at State College would be sponsored next year by their home club. The camp was held during the week of June 21-27, at the Pardoe Sportsmen's Club, near Pardoe, Pa., and was a solid week of outdoor activity for the boys.

The Mercer County Sportsmen gives much of the credit for the smooth operation of the camp school to members of the Butler and Lawrence County groups for their generous aid in furnishing copies of printed programs, sketches and much needed advice; obtained from and through their experience in conducting schools in the past. The boys were carefully graded each day on these points: A—Leadership, B—Manners, C—Neatness, D—Attitude, E—Promptness,

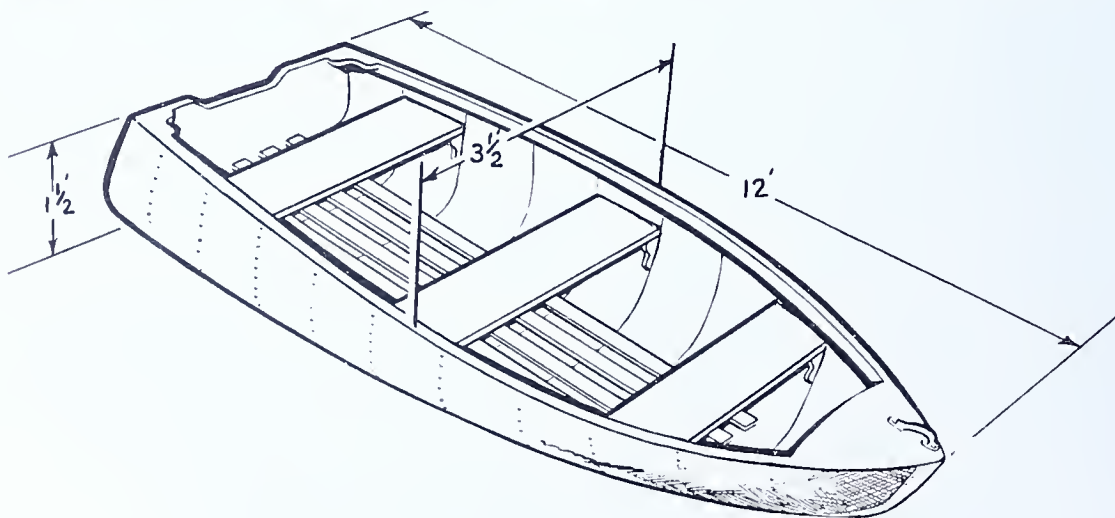
F—Obedience, and G—Participation.

Lectures and programs were provided by—game protectors Arthur Biondi, Mercer, and Arden Fichtner, Greenville; Captain Robert Burns, of the ROTC unit, of the Grove City College, Grove City, on Civilian Defense and Air Force Tactics; Robert D. Parlaman, Franklin Office, Pennsylvania Game Commission, with instruction on game law enforcement and game commission history.

Mr. Richard Bowman, farm forester, Clarion District of the Pennsylvania Department of Forests and Waters, carefully explained Farm Woodlot Timber Cropping. The Mercer County Soil Conservation District, under President Melvin Bliss, presented an interesting program on conservation aid by Mr. Donald Williams and Mr. Howard Crawley, U. S. Soil Conservation Service. A program of State Police Law Enforcement and Methods of Procedure by Robert Crowthers, of the State Police Barracks, Butler. Water Safety Instructions and Swimming and Life Saving Methods by Joseph Mater, instructor at the McClintick Swimming School, Sharon, Pa. The Pymatuning Power Squadron under Commodore William DeForest and Hartley D e r m o n d, public relations director, stressed Boating Safety to the group.

One evening witnessed the regular monthly meeting of the Mercer County Council of Sportsmen's Clubs in session at the boys camp, with all the camp boys taking part in the meeting as special guests of the Council. A highlight was the presentation of the Fish Commission's newest conservation tool, an electric fish shocking device, in action, with Fisheries Biologist, William Daugherty, of the Northwest Division Office of the Fish Commission, demonstrating and elaborating on the subject. He was assisted by Richard Abplanalp, fish warden, Mercer and Lawrence Counties. Farm pond fertilizing was carefully explained to the class. Predator Control was under the instruction of Mr. Robert F. Shelby, deputy game protector, Linesville, with detailed instructions on setting traps for foxes and other predators. Outdoor Survival program by Paul Miller, Butler County game protector. This was a very exciting program for the boys because of its possibilities if ever caught in an unpleasant position in the field during their later years. Skin Diving instructions by Charles Wing of New Castle, pointing out the advantages of skin diving for fun, profit and life saving. Archery instructions by members of the Mercer, Grove City and the Shenango Valley Archery Clubs successfully completed a very busy Mercer County Conservation Camp School.

How to Figure the Capacity of Your Boat



Multiply length (in feet) times maximum width (in feet) times maximum depth (in feet) times 0.6 divided by 12, multiplied by 150, except where beam measurements are 48 inches (4 feet), use 1.6 feet as maximum depth; 49 to 55 inches (4.1 to 4.6 feet), use 1.7 feet as maximum depth; 56 inches or over (4.7 feet or over), use 1.8 feet as maximum depth.

For example, for the boat pictured:

$$\frac{12 \times 3.5 \times 1.5 \times 0.6}{12} \times 150$$

This boat has a safe capacity of 473 pounds

Important!—all boat measurements must be designated in FEET when using this formula!

Remember, to make adequate allowance for the weight of your motor and equipment.

—Water Safety Congress

How to Clean Pan Fish

By LARRY J. KOPP

(Photos by the Author)

There is nothing like catching a mess of fall fish for breakfast! But why spoil your adventure by using a scaler or skinning tool designed for lunkers in order to clean them?

Follow these creel-to-refrigerator illustrations and eat your pan fish the way pan fish ought to be prepared and eaten.



SINCE SCALES are exceptionally difficult to remove when dry, it's always a good policy to keep your catch moist while fishing by lining the bottom of your creel with wet grass.



WHEN READY to clean a mess, dump the fish into a bucket of water. Allow several minutes for the scales to soak loose.



HOLD FISH by the head and, using a fairly sharp knife, start at the tail and always scrape the scales towards the head.



WHEN ALL scales have been removed, hold fish as shown, for safety reasons, and cut off all fins.



TO REMAIN on the safe side, place fish upon a flat surface and sever head and tail as indicated.



REMOVE ENTRAILS and wash cavity in clean water.



SALT ACCORDING to taste and place fish in refrigerator overnight.

A Boost for the Susquehanna

The best smallmouthed black bass river in the world is our Susquehanna. Your narrator wrote and quoted that many years ago after fishing the Mattawa, French, Cologne and Ottawa Rivers that were highly advertised and over-rated, and found that we had better smallmouthed black bass and fast water river fishing right here in our own back yard—the Susquehanna River. And, to top it all the mountain scenery from Pittston to Towanda along this river of ours can't be beat, regardless of fancy brochures and picture settings that lure you to far-away places that don't produce as good fishing as we have here at home.

Oh yea, I've had the pleasure of Indian guides, wilderness canoe trips and catching 3 to 5 lb. brook trout in virgin rivers that flow into Hudson's Bay, where Northwest Mounted Police check your guides and baggage before you start on one of these semi-dangerous trips. These places are not on the beaten path. There are no accommodations and one must work hard, sleep on the ground and live rough to enjoy this virgin fishing. It's still good fishing in the Nagagomi, Pitopika and Otasawian Rivers up there, but a fellow must plan weeks ahead to insure safety and reliable guides.

I admit, and have been contacted for information on all the above, that a fellow does want a few of those trips in his life, but we average fishermen want to fish as often as possible, so let's go up the river

with the gang. (Shs-s-s, don't give up planning a trip up to God's Country.)

Susquehanna Fishermen

We started out writing about the best bass river in the world. Pollution, some erosion and a great many more fishermen have dwindled the consistent catches of big bass in the river, but the Susquehanna is still holding its own.

Maybe like the lazy deer hunter, who does not travel more than 100 yards from his car, do you hit only the spots close to the road or an easy boat landing? The other fellow and many others have fished there every day. Try some of the inaccessible places where you must walk to, and you will find that the old Susquehanna is what it's cracked up to be with lots of big bass to be caught.

The above is a part of a "Doings With the Rod the Reel the Rifle" column in a recent edition of the SUNDAY DISPATCH, by Joe Koval, outdoors writing man from Wyoming, Pa. The balance of the column listed the names and catches of almost a dozen anglers—and respectable catches they were, including limits and small-mouth to 23 inches and walleyes to 28½ inches, from nearby reaches of the river—to prove his point.

State Senate Commends Fish Commission

STATE OF PENNSYLVANIA



HARRISBURG, PA.

Office of the Secretary

Resolution

In the Senate, September 15, 1959

WHEREAS, fishermen's maps that would be complete as to the waters of the Commonwealth and how to reach them have long been sought by the many fishermen in the Commonwealth, and

WHEREAS, the Pennsylvania Fish Commission has instituted a project to fill the need by creating and instituting the publication of such maps and entitled them "Waters-Highway Maps," and

WHEREAS, the maps have been drawn on a sufficiently large scale to contain and name all waters that could contribute to hook and line fishing yet, by limiting the coverage of each to one or two counties, they remain small enough to be carried and used afield, and

WHEREAS, the physical features on the maps have been limited to those essential for the special use to which they will be put, with each feature—waters, roads and state-owned lands—printed in a different color, thus making them truly functional and easy to read, and

WHEREAS, by careful planning their production costs have been kept sufficiently low to permit to be self liquidating at per map costs within the reach of most fishermen, and

WHEREAS, the conception, development and production of these specialized maps represent a service that in significant respects is entirely new among the conservation agencies of the nation, therefore be it

RESOLVED, That the Senate of Pennsylvania commend the Fish Commission for these original, useful and distinctive publications.



I certify that the foregoing is a true and correct copy of a resolution introduced by Senators Israel Stiefel and Martin Silvert and adopted by the Senate of Pennsylvania the fifteenth day of September, one thousand nine hundred and fifty-nine.

EDWARD B. WATSON

Secretary

STATE OF PENNSYLVANIA

The following are the maps presently available and their respective prices: Bedford, Clinton, Crawford, Erie, Lancaster, Luzerne, Lycoming, Pike, Potter, Somerset, Wayne, Westmoreland and York—35c each; Cameron-Elk, Carbon-Monroe, Dauphin-Lebanon, Franklin-Fulton, Lackawanna-Wyoming and Lehigh-Northampton—50c each.

The following maps are expected to be available by

mid-November or shortly thereafter: Clearfield, Susquehanna, Bradford, Tioga and Huntingdon—35c each; Montour-Northumberland, Washington-Greene, Warren-Forest, Jefferson-Clarion, Sullivan-Columbia, Bucks-Montgomery, Blair-Cambria, Perry-Juniata-Mifflin—50c each.

Maps of the remaining counties are expected to be available by mid-March, 1960.



NEW THINGS in TACKLE and GEAR

Intended as a service to ANGLER readers wherein new items of fishing tackle and outdoors gear that come to the attention of the editor are introduced, with no intention of endorsement.

Address all inquiries to the respective manufacturers.



Fish Buoy

Fish Buoy keeps your fish alive, safe, and frisky! Keeps them separated and all at the proper depth. Even when detached from its mooring, it floats and its bright colors are always visible.

Molded of ultra tough plastic and equipped with new, non-rotting polyethylene rope, your Fish Buoy is designed to give years of dependable service.—**Tigrett Industries, Jackson, Tenn.**



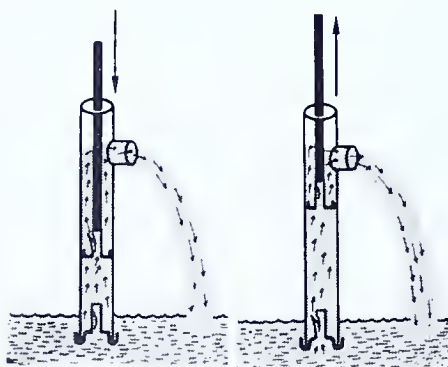
Rubber Sportsman's Suit

Now sportsmen can get a fishing or hunting suit that water won't soak through. Jacket and trousers are made in one piece of pure gum rubber by an entirely new process. There are no

seams to leak, no fabric to rot or mildew.

Lightweight, comfortably ventilated, this all-rubber suit, worn over regular hunting or fishing clothes, keeps the sportsman dry. Hip length jacket features an attached hood, self-adjusting, drip-proof cuffs, and wide bellows at neck to provide ventilation on "warmer" days.

They won't bind when walking or climbing. Tough as cowhide, they'll give years of service. Now available in sizes small, medium and large.—**So-Lo Marx Rubber Company, Loveland, Ohio.**



Trylon Pump

The Trylon pump is the first double-action pump with the exclusive "Fish-Gill" valve (patent pending) which greatly increases pump performance and capacity without corresponding increase in size and weight. The easy stroke Trylon can pump 10 gallons per minute with minimum effort. It has no metal parts to mar the boat finish, and if dropped will not injure you or your boat, since it weighs only 10 ounces. Can't be lost overboard because it floats, *will never sink*.—**Edward M. Melton Co., 60 East 42nd Street, New York 17, N. Y.**



Safety and Fashion

A new Fishing and Sports Vest for anglers, hunters, and water sports enthusiasts has the smart appearance and comfort of a sleeveless sweater, yet provides the same type of flotation system used by the U. S. military forces. This instantaneous inflation system floats the wearer in an upright, face-up position, even if unconscious.

Compressed gas jets into the front flotation compartment and the neck cushion, when tabs are pulled, and a supplementary oral inflation system permits the wearer to inflate or deflate as desired.

Available in men's and women's models in sizes ranging from extra small to extra large. Fishing model is available with special pockets and lamb's wool patch for hooks and flies.—**Rubber Fabricators, Inc., Grantsville, W. Va.**

Catfish Bait

Super-stout catfish bait is a basic cheese and blood combination. It is considered one of the most potent catfish baits on the market today.—**Kautzky Lazy Ike Co., Fort Dodge, Iowa.**

Thoughts Between Bites

Man has found that from a lump of coal he not only can get heat for his home but that he can get dozens of other articles and services which he can use in his daily life. But to make coal yield many more values instead of only one, man had to learn a lot of things. And so it is with our land and water conservation. Conservation is an appreciation of the many values we can derive from our land and water and the understanding of how to get these values. But, just as man had to learn a lot about a lump of coal, we have to learn how to make the best use of land with all its wealth and the water without which the land would be of little value. The restoration and preservation of our fish and wildlife resources depend to a large extent upon public understanding. To present to the public the facts about the causes of resource problems and the means of solving them is, in its

broadest sense, the mission of conservation education. Conservation education is a necessary and fundamental part of any successful wildlife program. The scientists who work on fish and wildlife problems can develop methods and procedures to get the greatest possible use of these resources for the most people for the longest possible time. But to achieve such goals, people must implement these plans of the resource scientists. For lasting results we must start at the bottom and attempt to mold the opinions and the philosophies of the youngsters now going through school. This is the long-range approach to a better understanding of the importance of protecting our natural resources in order to make America the kind of country we all want it to be. Join in local efforts to secure more conservation teaching. It will pay big dividends.

—Ross Leffler, Assistant Secretary for Fish and Wildlife

Buggy Fishing

Some guys are just bugs about bass, and when suffering from this mystifying ailment there's just no telling how far they'll go to pick a fight with "old bucket mouth."

Sometimes this passion results in strange antics that assure the casual observer that the angler has definitely flipped his lid. When a normally rational guy talks about "dry land" fishing, you're sure he's had it.

But "dry land" casting is not as crazy as it sounds, and when the verbiage is straightened out to meet the situation, it can be a mighty effective technique for taking bass. In fact, says the Mercury outboard company, fishing "dry land" is the mark of an expert, a fellow who cruises back to the dock with more fish than excuses.

This misnomer of fishing applies to the use of surface plugs on dense beds of duck wort and other aquatic vegetation. "Walking" a bass bug across this thick carpet is often the only way you can get strikes, and it's always exciting.

When a small lure is cast on the floating mass of weeds and retrieved through the entanglement, the action closely resembles a luckless insect or frog caught and struggling through the maze. When a fish strikes, he gulps plug, weeds, the whole works, then he's off and running.

The next time you unlimber your rod, whip it over the "dry land" and see what happens. With just one strike, you'll be bugs about bass, too.

Conservation

"CONSERVATION," a 72-page resource book, published by the CAMP FIRE GIRLS, Inc., is a handy, useful and attractive guide compiled for adults working with young people. According to Paul B. Sears, Chairman of the Yale Conservation program and author of many books on conservation, "This book is a sound and practical job, especially welcome as an answer to the many requests for material suitable for young people. Its benefits should extend far beyond the membership of Camp Fire Girls organization."

The colorful book is crammed with lively ideas and how-to-do-its which are for the enthusiastic conservationist. The first section is a guide to the exploration of the natural resources of the reader's own community in order to learn "What's where, and why." By studying lakes and ponds, rivers and streams, meadows and fields, beaches and deserts, forests and woodlands, bogs and marshes, cities and towns, the reader can learn problems which can and do exist in his own vicinity.

The second section suggests ideas and ways for the individual or group to conserve resources including soil and land, water, forests, wildlife, minerals and human resources.

A conservation directory lists local, state and national sources for assistance. The layout, format, full page photographs and explanatory line drawings will appeal to both young people and adults. Price of the book is \$1.50. It may be purchased through the Supply Division (Code No. D-249), Camp Fire Girls, Inc., 450 Avenue of the Americas, New York 17, New York.



Notes FROM THE STREAMS

Return of the Native

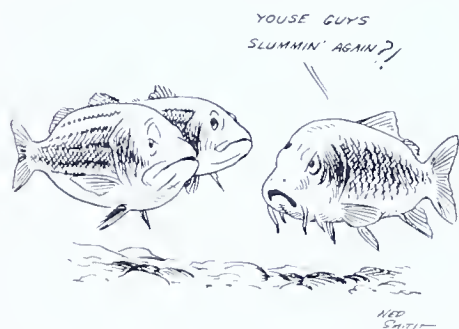
Evidence that goes back to 1956 that the striped bass is returning to the Delaware River was strengthened this year. Since 1956, a few of the striped fish, long supposed gone from the Delaware, have been caught. This year catches of nine to

eleven inches ranging from as far as Portland in Northampton County on down to Upper Black Eddy, New Hope and Washington Crossing in Bucks County.

While the catches are not that numerous it is interesting to

note that the once polluted waters of the Delaware have cleared enough to make it once more inviting for the striped bass to move upstream.

—Miles Witt, Warden, Bucks County.



The Rivalry

A vengeful rivalry has developed between Warren County fisherman Bob Sibble and a certain muskellunge who makes his home in a deep hole in the Allegheny River.

While fishing the hole one night, and having no luck, Bob was just bringing his bait in when a large musky struck at it and missed, but hit him a glancing blow on the leg and nearly knocked his feet from under him.

He fishes the hole with a vengeance now and has succeeded in hooking the big fish only to have his line break. Ah but there are more days to come.

—Kenneth Corey, Warden, Warren County.



No Fish in the Creek

In the past few years sportsmen have complained that there were no fish in the East Fork Creek. Recently biologist Dan Reinhold and myself, assisted by local sportsmen, shocked the creek. In a 1,300-foot section of this stream we shocked nearly 200 trout. Twenty-four of these trout were over 12 inches long, the largest 24 inches and a number between 12 and 20 inches. This stream is on a program for fall stocking. All stocked fish have been eliminated for two years. Of all the fish that we shocked only two marked fish were found. The others were all native fish, highly colored and in beautiful condition.

—Kenneth Aley, Warden, Potter County.

The Show's the Thing

Youngsters, ages 8 to 18, showed the older folks how it was done, at the annual boat and water ski show put on by the Raystown Boat Club. The kids put on a fine exhibition on boat handling and water skiing. The show, held during the Labor Day weekend, attracted a large crowd and is helpful in demonstrating boating problems.

—Richard Owens, Warden, Huntingdon-Mifflin Counties.

Tree Top Tragedy!

While working along Pymatuning Lake in the vicinity of Jamestown, I discovered a half-grown robin hanging from a tree. Upon investigation, I found a piece of spinning line tangled in the branches. A fisherman evidently cut the end from the tangled line, leaving the baited hook which the robin swallowed.

—Raymond L. Hoover, Warden, Crawford County

A Fish Story?

While at a sportsmen's meeting on October 1 at Union City, the members reported a muskellunge weighing 38 pounds and measuring 55 inches in length caught in French Creek below Union City. This fish was seen by several members, but no one seemed to know the man's name who made the catch, but a witness stated that the fish was caught on a soft-shelled crab.

—Norman Ely, Warden, Erie County

Muskrat Survives Electric Chair

While assisting fishery manager Simes and supervisor Corbin on a stream survey on the East Branch of Standing Stone Creek in Huntingdon County, we came upon a deep pool with overhanging roots. As the electrodes of the shocking machine were placed under the roots a terrific splash occurred. Expecting to see a huge trout, you can imagine our surprise when a medium-size muskrat came to the top of the water.

I took the muskrat, which had been stiffened by the voltage of the charge, and placed him on the stream bank. A few seconds later he recovered and moseyed into the water and back to his hole. We had a laugh from the muskrat who survived the chair.

—Bernard Ambrose, warden trainee.



School Again

... and some questions for parents

By J. J. SHOMON

Parents watching their children trot off to school are apt to greet the occasion with mixed emotion. Some will be saddened seeing their sons and daughters leave—even for a few hours a day—for the ties that bind a happy, well-knit family are always strained when loved ones are apart.

The impartial observer watching the parade of young humanity toward the yellow buses and into the school buildings is prone to pause, perhaps even ponder, over the ageless old question: What kind of a new society are we building? Are we who are viewing “school days again” with sorrow or apathy or relief giving this question serious thought? If not, is it time we did so, and what time is better for a little soul-searching than in the quiet of the home when the children are away or asleep? Have we done right by them during the summer months? Have we guided them properly, associated with them sufficiently, molded their character? Have we taken time out to instruct them in the finer and simpler things of life and in the traits that make for true womanhood, manhood?

How many of us have taken our sons or daughters or both on a hike or camping trip or fishing jaunt?

Have we taken them out at night and told them about the stars and Saturn and Venus and Jupiter? Have we told them about the millions of tiny chemical mills in the leaves of green plants and how a tree grows? Have we showed them the beauty of the delicate wildflower in the woods and of the symmetry of the bird nest in the rosebush?

How many of us grown-ups have taken time out to teach our young people something about kindness and respect and love for the things of the Earth? How about natural laws?

A look around our littered countryside or around correctional institutions and law enforcement offices and courts shows we have not done enough of these things. Too many youngsters are going to school this September without having been given the right kind of tutelage by their parents. No, parents have been too busy, or too tired, or too preoccupied with their own notions of fun and entertainment to spend time with them. The refrain is, Leave it to someone else; leave it to the schools to teach discipline and good habits; leave it to the Sunday school to tell them about love.

What fools we are to think we can raise a generation of creditable Americans and still neglect the

proper influence of the home. How wrong we are if we think we can instill citizenship responsibility in our young people and then not train them for it. The old truisms still apply: As the twig is bent the tree grows; train up the child in the way he should go, and when he is old he will not depart from it. Neglect him and he will show neglect.

It is interesting when one observes children and sees their behavior to speculate on the kinds of homes they come from. As one can see by the vitality of an oak tree the quality of the acorns it produces, so one can tell the character of the parent from the child.

Some readers may inquire without much thinking what all this has to do with conservation. Only this: Conservation is dead unless it also includes a way of thinking and behaving toward the things of the earth. Yes, the term is a meaningless abstraction unless it involves the proper attitudes and thoughts and actions of people. And how are proper thoughts and attitudes to be formed if they are not to be formed in the molding place of character—the home.

There is a popular tendency today to shift the responsibilities for our ills onto schools. But it must be remembered that schools are only institutions and can only do for a child what the soil or climate can do for an oak tree. The oak seedling will grow better in one site as compared to another, but the tree itself will become essentially what the acorn was when it was shed by the parent tree.

The America of tomorrow is the youth of today. If we shape the mind and character and will of the young of today, we need not worry too much of the tomorrow. If we want America to remain beautiful, we must create the feeling and the will in people to keep it that way and this attitude must be created early in life.

And parents should not be distraught or discouraged at apparent early failures. Out of despair and discouragement often comes hope. One need only go back fifteen centuries and read how the heart of a mother was wrenched with sorrow over a wanton boy, and St. Ambrose said: “Weep not, Monica; the child of so many tears cannot perish.”

And that wanton boy when he grew up, believe it or not, was none other than the kind and learned St. Augustine—one of history’s great and noble men and whose remarkable “Confessions” are classic. Every American parent ought to read them before his children grow up or before he dies.



CONSERVATION ACROSS THE NATION

Pollution Doesn't Pay in Virginia

Pollution doesn't pay in Virginia, as the American Viscose Corporation found out when the Virginia Water Control Board assessed a fine of \$154,700 for "negligent discharge" of zinc-bearing waste that killed an estimated 500,000 fish on a 36-mile stretch of the Shenandoah River.

The poisonous waste also wiped out mayflies and snails and drastically reduced fish food bottom organisms.

A fisheries biologist of the Virginia Game and Inland Fish commission testified that the fish kill figures, which excluded minnows and other small fish, were conservative. The Commission placed monetary values on the various fish as follows: 35,000 bass, \$68,250; 170,000 bluegills, \$7,820; 265,000 catfish, \$74,200; 30,000 suckers and carp, \$4,500.

Look Ma! No Wheels, No Prop, No Nothin'

Suppose you have read about the latest in transportation—the "Air-Car"—scheduled to come off the Curtis-Wright Corp. assembly line next year. It purportedly travels on a cushion of

low pressure, low velocity compressed air, over land, *water*, swamps, or any unobstructed terrain 6 to 12 inches off the surface. Capable of speeds up to 60 miles per hour, this 8' by 21', 300 hp. vehicle may well add to the growing traffic problems on the lakes of the nation.

In years to come, the old-fashioned,

blissful boat fisherman may be abruptly treated to a bur haircut from above by a speeding "Air-Car" and a tub bath from below by a fast-surfacing "sportsman's submarine." A water-skier towed behind the Air-Car might complete the treatment by pressing the prostrate angler's pants in a final pass.

—Sport Fishing Institute

Ohio License Sales Down, Too

According to the October, 1959, "Ohio Conservation Bulletin," the official monthly publication of the Division of Wildlife, the sale of hook and line fishing licenses in the Buckeye State for the year ending August 31, 1959, showed an 8.5 per cent decrease over the preceding year. The drop was reflected in each of the three type licenses—resident, non-resident and

tourist. The 1958 total was 683,379. The 1959 total was 625,368.

It is to be noted that the decline took place while the license fee remained unchanged.

Pennsylvania's decline during 1958, the last full year for which figures have been compiled, showed a drop of 5.4 per cent over 1957. 1958 was the first full year to reflect the Pennsylvania fishing license fee increase from \$2.50 to \$3.25.

Conservation in Congress

Among his many significant remarks to the International Association of Fish, Game and Conservation Commissioners conventioning in Clearwater, Fla., in mid-September, Congressman John D. Dingell from Michigan stated: "The legislative picture (on conservation) is not bright." The following summarizes his observations on that score and sums up the magnitude of the task confronting conservation forces:

Less than 20 per cent of the Members of Congress are conservation-minded to such degree that they will take the lead in fights on conservation, and less than 10 per cent are vigorous, active leaders in securing good conservation legislation. This is rather startling in view of the fact that in numbers alone hunters, fishermen, outdoorsmen, bird watchers, and other conservation-minded individuals are sufficiently numerous to be an almost irresistible body if they were sufficiently organized.

Economic development is used by Chambers of Commerce and others who seek to further legitimate uses of our resources in competition with conservation. They have a louder voice, a better financed and more effective lobby than the conservationists. This is equally true in the case of executives of states and of the federal government across the land. It is a sad fact that cattlemen, stockmen, oil interests, real estate developers, industries, mining interests, and even hard case water polluters are just too well financed and organized for vigorous advance by conservationists on the legislative front without vastly increased effort.

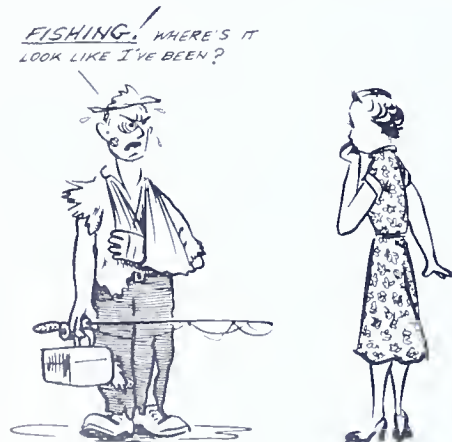
—Sport Fishing Institute Bulletin

Panfish Rate High!

You read a lot in the daily press about people eating spectacular big-game fish like marlin, salmon, and muskie. Most fishing, however, is done for the lowly panfish.

Over 600,000 licensed anglers, for example, fish in Ohio's waters yearly. Half the fish caught there are bluegills. One-third are crappies. Catfish and bass are next in importance. All other fish make up the remaining 9 per cent, according to studies made by fishery biologists.

—American Legion Magazine





BOOK REVIEW

The World of Butterflies and Moths

by **ALEXANDER B. KLOTS**

207 pages. Illustrated with over 180 photographs, with 37 in natural color. Published by McGraw-Hill Book Company, 330 West 42nd Street, New York 36, N. Y., 1958. Price \$15.

Using a minimum amount of words to describe a maximum amount of detail, Alexander Klots rewards the reader with a vivid and fascinating view of the little known world of butterflies and moths. Author Klots is a noted entomologist associated with the City College of New York and the American Museum of Natural History.

The information contained on these pages is of such a variety that it is of value to the lay reader and entomologist alike. The generally known facts about the structure, environment, sense habits and behavior of Lepidoptera, as well as the little known facts of how the butterfly uses silk not only to spin a cocoon but as an important defensive measure, how the same mechanism responsible for the blue in the sky and the color of the rainbow is also the source of much of the butterfly's coloring, makes the reader's task an enjoyable one.

Interwoven with the narrative are more than 130 butterflies in brilliant color on 24 full color plates and many black and white photographs of superlative quality. These illustrations, supplementing the textual material, make this book a handsome addition to the private library of sportsman and naturalist alike.

Living Silver

by **BURNS SINGER**

232 pages. Illustrated by Robert Frame. Published by Houghton Mifflin Company, Boston, 1958. Price \$3.75.

The lives and labors of the commercial fishermen who daily fish the waters of the North Sea for halibut,

haddock, cod and herring is the general theme of this volume. The lesser, but none the less more fascinating, theme is a lifelike portrait of the sea and a scientific observation of the fish that swim its depths.

Seen through the eyes of Jan, a young Polish exile, the reader learns about the workings of the commercial fisherman with his special crafts in using the long line, lobster pots and large nets.

The author is a poet with a marine science background. The end result is a completely readable and scientifically reliable book.

Conservation Education in American Schools

527 pages. Illustrated with black and white photographs and cartoons. Published by the American Association of School Administrators, a department of the National Education Association of the United States, 1201 Sixteenth Street, N.W., Washington 6, D. C.; 1951. Price \$3.00.

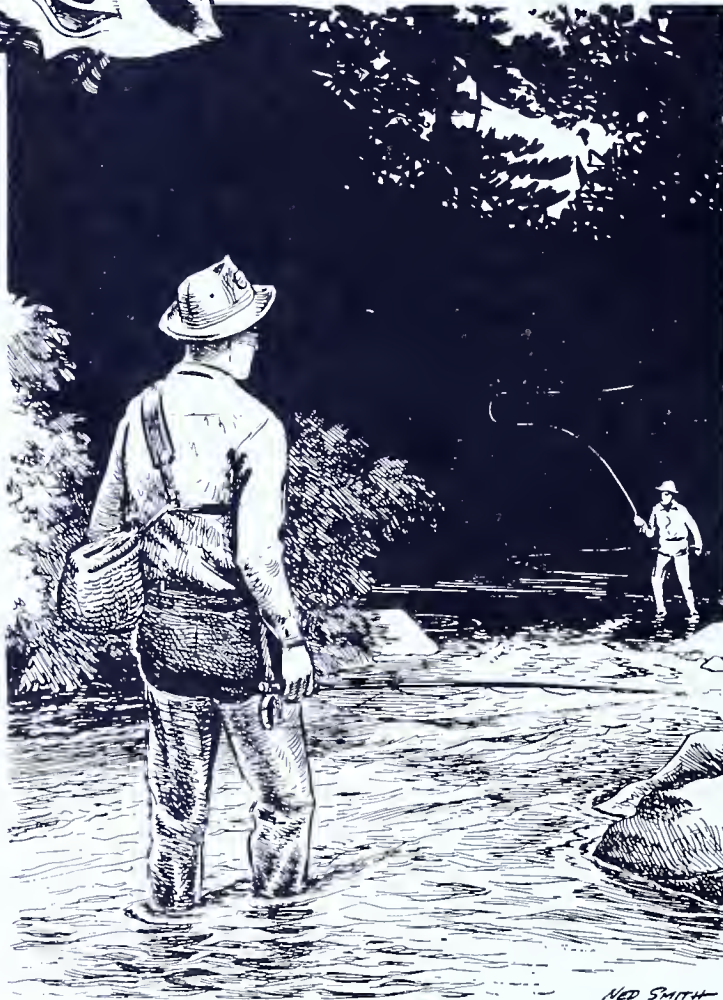
Recognition of the fact that the prudent use of natural resources in a democracy depends largely on education, led to the appointment of the 1951 Yearbook Commission "with instructions to explore the role of the nation's schools in the area of conservation education."

"This yearbook on conservation education pertains to the wise use of natural resources, not to miserly hoarding. Conservation is interpreted as the kind of resource use which results in the greatest good for the largest number of people for the longest time. Attention is focused on education for the conservation of natural resources although the Commission recognizes full well their interrelationships with human resources and cultural patterns."

This book defines the broad area of school responsibility in conservation education and indicates what can be done about it. "Challenges, guides, practices, materials and facilities are outlined in ways which would be helpful to school administrators in expanding and improving school programs of conservation education."



**HOWDY asks—
Are You Guilty of
"IMPROPER PASSING?"**



NED SMITH

If you were the angler on the left would you leave the stream and carefully walk around the other fellow? Or would you wade closer, hoping he'd give you the right of way? Sportsmanship is more than obeying written laws. It includes also consideration for your fellow outdoorsmen.

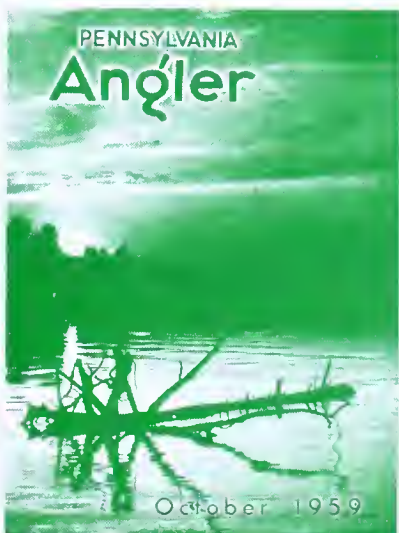
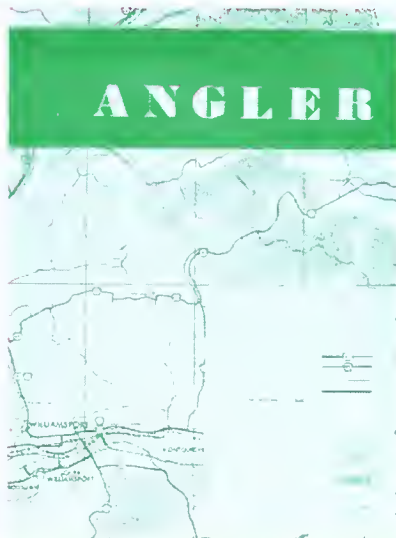
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PENNSYLVANIA

ANGLER

PENNSYLVANIA FISH COMMISSION

DECEMBER 1959





We Are Not Alone

For months the House Committee on Fisheries of the Pennsylvania General Assembly has heard testimony, read letters from interested citizens, and puzzled over the question of why fishing license sales have declined here in the last two years.

The Fish Commission likewise has pondered the subject, has analyzed many aspects of the matter, has looked long and hard at its program of fish management for the Commonwealth, and examined whatever else came to its attention, in an effort to find answers to the same question.

Did the reason for part of the decline lie in the fact that in late 1957 the cost of the license was increased by 75 cents? Was the economic setback that struck Pennsylvania one of the reasons? Could it be that the continuing pollution of many Pennsylvania streams, and the wide publicizing of each discovery of fish-killing pollution, had a bearing on the decline? Or was it a combination of all of these, plus others?

The returns aren't all in, and a package answer may not be discovered or even possible. The fact is that there was a decrease, amounting to about 13 per cent over two years, 1957 and 1958, as compared with our all-time high of 741,000 sales in 1956.

Was the 1956 total an unusual thing in itself, an abnormally high figure, triggered at least in part by the hope of the fishermen that a new Commission and new top level staff could work overnight miracles for the fishermen?

In the face of the tens of thousands of printed and broadcast words of complaint and criticism that have been poured out to the public of Pennsylvania, can it be expected that the 1959 figures will do other than show an additional drop? Only time will tell on that, when the last license selling agency has made its final report to the Department of Revenue sometime in 1960.

From the tone of some of the testimony, letters, and critical publicity, the casual observer might come to the conclusion that Pennsylvania has been alone in the trend, and that, in fact, Pennsylvanians are swelling license sales in all our neighboring states rather than buy and fish at home.

That isn't so. We have gone to official sources in all our neighboring states to learn the facts, and here is what we are told:

In Ohio, which has not had an increase in license price, there was a drop of 8.5 per cent in numbers

sold, in the license year ended August 31, 1959. The 1958 sales were 683,000 licenses; the 1959 sales were 625,000 licenses.

In New Jersey, where the figures given cover the nine months ended September 30, 1958, and 1959, the decline in numbers was about 3 per cent, from 143,100 to 138,800. In trout stamps the decline was more spectacular, almost 10 per cent, from 86,000 to 77,000. New Jersey did not have an increase in the license price.

In New York, where the license year was changed but the license price was not, figures not completely comparable indicate a total decline from 543,000 to 520,000, a decrease of about 4 per cent.

In West Virginia, where the price was not increased, there was a decline of 8.6 per cent from 216,000 to 197,000 in fishing and combination hunting-fishing licenses. There was no increase in price.

Delaware alone had a small increase, of about 300 licenses.

Maryland had the most spectacular change of all, a drop of 39 per cent in total license sales, from 146,700 in 1957 to 98,100 in 1958. Yes, Maryland had an increase in the license price, doubling it from \$1.50 to \$3.00.

When we talked with Director W. M. Lane of West Virginia about all this, he chuckled and said:

"This sounds very familiar, almost like some of our own people talking. But you've got it backward. What they tell us here is that everybody has quit fishing in West Virginia and is going to Pennsylvania where the fishing's better!"

Maybe that is a good place to stop. Maybe the quality of Pennsylvania fishing is a factor in the sales of licenses, maybe it isn't. And, perhaps the grass isn't greener on the other side of the pasture fence; perhaps some people have just imagined that it is.

The hard, indisputable fact is that while the fishing waters and weather weren't the best in the world in Pennsylvania last summer, those who knew where to fish, who could get to those waters when they were in good condition, and who know fish and fishing well enough to use the right lures and techniques at the proper time, had a good fishing year.

Equally hard and indisputable is the fact that we are not alone, in Pennsylvania, in suffering a drop in license sales. It happened to our neighbors, too!



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THE COVER: Combination Covers of 1959

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The Incomplete Angler

By DON NEAL



BECAUSE OF the control that can be had with the spinning outfit it is ideal for spot casting to hot spots in almost any location.

If history really does repeat itself, it seems we are about to witness one of the greatest switcheroos in fishing tactics that has occurred on Pennsylvania streams in the last decade. We are about to see—once more—Mr. Average Fisherman come to the realization that Mr. Average Fish, regardless of his species, isn't quite as gullible as said fisherman has deemed him to be. Also despite the assurances of the tackle salesman, there are some spinning, bobbing, bouncing, weaving, and wabbling lures that he (Mr. Fish) can pass up at will without becoming neurotic. The swing of the pendulum in this direction has been increasingly evident during the 1959 season.

However, whether it will develop to have been that season or next or next, the exact time of change is of

little consequence. It will have been bound to come. The history of fishing, especially trout fishing, is replete with fads and counter-fads. No one method ever long enjoyed the distinction of being supreme. Each method in turn had its day of ascendancy, but in time descended to or near the level of its predecessor. Not because the angler is fickle or inconsistent in his ways—but because the fish, after a few seasons of exposure, smarten up to any one way of luring him. When this happens, the fisherman, if he is to enjoy continued success, is forced to find something new—or revive the old.

Since the early post World War II days, the spinning method of fishing has been it. Seemingly, here was a method of taking fish which was so efficient



CHANGING FLIES isn't changing methods. If the fish have you stumped try a few wet flies in different sizes rather than different patterns. Then try a nymph on an extra fine tippet. If the fish are working on the surface try dry flies, of course.

that it was only a matter of time until our streams and lakes would be virtually cleaned out. Actually, fishing partner Leonard Lesser and I, among the first brave souls to venture forth on Pennsylvania streams using the comical "coffee-grinder" reels, were so successful for a time that we even contemplated to what we could turn for our outdoor kicks when the unhappy state arrived—when it would no longer be practical to spend our days on the streams. Really, we were serious!

However, as more and more spin-fishermen joined the clan on our favored waters, our successes leveled off. After four or five seasons, both of us were again tossing our wets and dries with only an occasional return to the spinning outfit.

Not that we lacked confidence in our spinning gear, for when conditions are right we still find there is no equal to the lure of the spinning lures. It was our experience, even after the fish had seemed to "wise up" to the hardware, that the spinning outfit was at its best, more practical and efficient, when the waters were decidedly above normal and roily.

There was a basic reason for this, we thought. As all spinning lures have two definite characteristics—shining parts and body weight—they present two problems, reflection and splash, both of which are seldom conducive to fishing success in low or normal water conditions. Many years astream convinced us that most fish are "spooked" by a flashing reflection above the water. It is unnatural and invariably sends a wary trout or bass scurrying for cover. Understandably, these "spooked" fish would not be free strikers.

Secondly, no reminder is needed that even the soft splat of a poorly cast fly is often enough to put down a feeding fish. Thus, we couldn't reconcile ourselves to even the quietest dive of a spinning lure in low or normal water. Conversely, when the water was high and the fish were on the prod, both of these seeming disadvantages, especially the "splat," turned in favor of the spinning lure. The fish, reversing his usual darting for cover tactic, attack them viciously.

Yet, despite all this logic, I am sure there were times when we fished the fly that the spinning outfits would have produced as well or better. This, I hold, defines one of the real thrills of fishing—a fisherman in trying to outsmart the fish is never quite sure he is not outsmarting himself. It adds up to this: any fisherman will stand a lot better chance of outsmarting the rascals if he has more than one method of fishing and one set of lures to present his quarry. Such expansion of fishing abilities seems imperative for the generation which becomes initiated to fishing via spinning now that the "infallibility" of the spin method apparently is on the wane.

Yes, if history is about to repeat itself in the sport of fishing, the spinning rod and its elassy little lures will, short of virgin waters, never again enjoy the special favor with which they blessed the postwar decade. The outfit will, in all probability, become just another practical way of taking fish when the conditions are right for its use.

To the oldster who would broaden the scope of his fishing abilities and approaches, especially if he has been around long enough to have fished through those periods when the wet fly, the dry fly, the nymph, and the streamer were enjoying their respective heydays,

WET FLIES or nymphs are ideal for getting back under banks or brush without alarming the lunkers that hide in such places.



the switch to and from spinning and these oldtime favorites will come easy. To the youngster, weaned on the spinning outfit and uninitiated to the fly art, such versatility is not his to enjoy until he masters the fly rod.

The main element in changing the method of fishing is the conviction from the start that each at its own best time and place, is more likely to be productive than any other. If a fisherman cannot muster that conviction then he should stick to his personally favored method, even if he goes fishless, for he will be happier. Certainly there is no person more frustrated than a confirmed bait-fisherman for instance who switches to flies when he can't for the life of him understand why a fish wouldn't rather have a worm or a minnow than a mouthful of feathers. Believe me I know, for I have fished with many of them.

But on the other hand, if you want to catch fish under any and all stream conditions you will learn, not one, but all the different ways of fishing for them. What is a wing-ding killer of a method today will be a dud tomorrow. And this happens often enough to make a knowledge of wet flies, dry flies, streamers and nymphs, baitfish and fishbait fishing worthwhile and profitable.

This was emphatically demonstrated to me (for the 947th time, I think) when, this past season, one known to be an all-around fisherman consistently took good fish from a stream that others insisted was fished out.

What method or methods did he use and when, I couldn't say. However, at no time have I ever met him on the stream when he couldn't dig into the recesses of his fishing jacket and come up with something that worked. It might have been a badly chewed wet fly, a worse-for-wear dry fly, a mangy streamer, nondescript nymph, small wabblers or spoon, or any of a half-dozen other articles of fish lure. Further than this, he is just as apt to take to the woods to dig for worms with a stick or tear bark from a dead tree trunk in search of sawyers. Perhaps from a purist's point of view my friend is an "unorthodox" fisherman, but he is one fellow who generally gets action. And as he isn't interested in killing numbers of fish, his creel is generally graced by really nice ones.

Thus to any fisherman whose primary concern is action, the multi-method approach is not only his best bet, it is his only bet. This will be true so long as fish continue to be fickle and capricious. For the most part when trout are taking the dry fly, even a novice dry fly fisherman is more likely to do better than the expert using streamers, a spinning outfit, or bait. If they are taking wet flies, the novice wet fly fisherman has the advantage over experts employing other methods. Because of this, no "expert" is really an expert if his abilities limit him to the proper use of only one or two kinds of lures. When his methods are "off," he can do little but await a more favorable day.



DRY FLY fishing may be the acropolis of angling art, but unless one enjoys the practicing of its maneuvers even without success he will do well to remember that there are other efficient methods of taking fish; only using this method when the action of the fish makes it practical.

Actually, there is no reason why any fisherman can't be a multi-method fisherman. Despite what some would have you believe—there is nothing about any method of fishing that even borders on the mysterious or impossible. It can be granted that the expert of any method has spent many months or years reaching his degree of proficiency. But that does not mean the novice will need spend the same number of months or years in acquiring the art before he can catch fish.

THERE ARE times when the fisherman will be ahead of the game if he knows how to fish worms or minnows in the riffles, and fish them properly.



Fundamentally, the wet fly, nymph and streamer are to be fished under water. Get them under water and you will catch some fish. But certainly, the more you learn about handling and manipulating them when they are under water the more fish you will catch. The same applies to the dry fly—float it and you will catch some fish. Learn to cast it delicately, keeping the line from falling over a feeding fish, and your catches will be greater. It's as simple as that. And the Jack-of-all-ways has it all over the master-of-one.

As I have said at the outset here, the swing is away from the method that is currently most employed on Pennsylvania streams. There is little doubt that spin-

ning and its attending lures have passed their zenith on our heavily fished waters. Perhaps this change will be accelerated further by the introduction of a yet to be devised new method of fishing. It is more likely, though, to come as the angler, casting about to find some way of luring the fish to his net, revives some of the favorite methods of the past. But rather than advise an angler on which of them to concentrate or employ, I would caution against going hog-wild on any one method and suggest that he become familiar at the very least with all methods. In the end, he will probably catch more fish—and if he doesn't, at least he will be a happier fisherman in the knowledge that he has missed no bets.

ANGLER QUIZ

By Carsten Ahrens

Your Neighbors While Fishing

You Won't Fish Long Without Meeting These WATER INSECTS

- A. Dragonflies
- B. Damselflies
- C. Whirligig Beetles
- D. Mosquito
- E. Deer Flies
- F. Water Boatman
- G. Black Flies
- H. Water Scorpion
- I. Giant Water Bug
- J. Predacious Water Beetle



Giant Water Bug



Dragonfly



Mosquito

- 1. Surface skimming insects with curious eyes: the lower half for aquatic vision and the upper half for aerial vision.
- 2. Often called "mosquito hawks." The many-veined wings are held horizontal when at rest. Beneficial as adults. Powerful in flight.
- 3. The insect has a long posterior tube which it thrusts through the water film for securing air.
- 4. Insects with sucking mouth parts. The males of some species carry the eggs glued to their wings, making flight impossible during incubation.
- 5. Has the wickedest bite of all; often leaves a bleeding wound.
- 6. A tyrant over tadpoles. Greedy and rapacious in larval and adult stages. Chewing mouth parts.
- 7. The many-veined wings are held in a line with the abdomen when at rest. Wavering in flight.
- 8. The male harmless but the female sucks blood. She is often vector of disease germs.
- 9. Slow, sluggish insects with a poisonous bite. They are believed to carry the bacteria that cause rabbit fever.
- 10. A true bug with sucking mouth parts. It is graceful in water; only the long hind legs are used for swimming; awkward on land.

ANSWERS

C-1; A-2; H-3; I-4; G-5; J-6; B-7; D-8; E-9; F-10.

**The Pennsylvania Fish Commission's
New Lake Erie Power Boat...**

"The Perca"



Mrs. Dean of Meadville, wife of Wallace C. Dean, Vice President of the Pennsylvania Fish Commission, christening "PERCA," the Fish Commission patrol and work craft on Lake Erie.

Erie Times photo.

In keeping with the old nautical custom of christening new water craft for good luck, the "Perca," the new Lake Erie patrol and work craft of the Pennsylvania Fish Commission, was launched.

Mrs. Wallace Dean, wife of Commissioner Dean of Meadville, did the honors with the traditional bottle of champagne. The event took place on October 10 with the commissioners and members of the Commission staff and other dignitaries in attendance.

The new battleship gray cabin cruiser is 42 feet in overall length, 14 feet wide in the beam and has a draft of 3 feet. The boat's top speed with full equipment is 16½ miles per hour, about 13 knots, and has a fuel capacity of 200 gallons. The craft is powered by a diesel engine model 607IA, rated at 215 horsepower and equipped with a hydraulic clutch and a 3.1 reduction gear.

The boat carries the standard equipment including a radio telephone, a sonar set, a fathometer, double drum winch with a two-ton capacity and a marine type toilet with Seaclo chlorinator.

One man has been chosen by the Commission to be in charge of operating the boat. The boat will require an additional crew of two to three men.

The "Perca" will be used for routine patrolling of the Pennsylvania waters of Lake Erie for the purpose of inspection of commercial fishing boats and equipment, apprehension of commercial fishing units not permitted or properly licensed to fish in Pennsylvania waters and assist the Pennsylvania Department of Health in pollution inspection and surveys.

In addition, the "Perca," will also be used in research activities of the Commission and will concern itself with commercial fishing and biological characteristics of the Lake.



AL LARSON, fisheries biologist, finds this small Great Northern a slippery customer as it is examined for eggs in Misery Bay.

"Fishing's different from hunting," Old Mose said after a long silence had settled down over the boat. But he never took his eyes off the popping bug he'd just laid alongside an opening in the weed bed.

"Well, kinda," I told him. "One is done pretty much on dry land where you shoot dry land animals that would drown in water—and the other is done over water for fish-like animals that would suffocate in the air. By the way," I added, "this is fishing we're doing right now."

"Don't be so durn smart, young feller," he said in mock anger, taking his gaze from the bug long enough to miss the largemouth that sucked it in but promptly spit it out.

"What I mean is," he began to lecture, "that a hunter's principal quarry is the rabbit, or the squirrel, or grouse, pheasants, quail, turkey, and ducks—not the predators like the fox, the 'coon, the possum, and animals like that."

A

Fundamental

Difference

By **BILL WALSH**

"Everybody knows that," I said.

"Yeah, but it just occurred to me," he answered, "that when we fish, we're after the predators of the fish world—especially when we talk of 'game fish' like muskies, northerns, bass, and pickerel. Of course, pan fishing is important, too—but most sport fishermen would give up a mess of perch to take one good northern or muskie. Put it this way—in the hunting world, the predator is 'vermin,' but in the fishing world, the predator is the top prize."

Well, he was right and it got me to thinking about one of the Pennsylvania Fish Commission's new activities toward improving fishing—this one to increase great northern pike population in some of the Commonwealth waters in the natural range of the species and to introduce it in others. The great northern is a truly prize predator.

The first phase of the activity is acted out where great northerns enter Lake Erie's Misery Bay and the Peninsula lagoons at Erie, Pennsylvania, each spring-time.

Last spring's routine was typical and will be repeated annually, according to present plans. Using seven-foot trap nets Al Larson, the Commission's fishery biologist for the lake, and Shyrl Hood, superintendent of the Erie Station, and his crew moved into the water of the lagoons early in March. The object: to trap the northerns as they headed into their spawning grounds and strip the eggs from the females and the milt from the males. Neither the traps nor the stripping operations are harmful to the fish. And relieved of their burdens the fish are returned to their

element and the fertilized eggs are moved to hatchery troughs. The lagoon waters are the first to warm up sufficiently in the spring to attract the big fish.

They caught fish all right. The only trouble was they couldn't hang a sign in the water explaining to those other than the pike that they were not wanted. Almost every time the nets were lifted along with their complement of northerns there were some 500 to 1,000 pounds of yellow perch, bass, crappies, bullheads, suckers, chubs, gar, smelt—you name it, they had it.

The profusion of perch, however, were made to serve another purpose—a research dividend, as it were. Larson and the biologists of other states and federal agencies assigned to Lake Erie are conducting continuous fish migration studies. So, in between taking eggs from the northerns some 600 perch were tagged as part of Pennsylvania's contribution to those studies.

When Misery Bay's waters warmed up in late April, the trap nets were moved to favored spots there. Out of another wave of northerns some more were trapped and tapped of their eggs. In all, over 150 had contributed to the year's project.

Of course, these 150 were only a fraction of the breeding population of this species that moved into the areas. Their removal from the total breeding activities is held to have little if any effect on the natural reproduction there. Further, a generous portion of the hatched fry are returned to the waters from which they were taken as eggs. And this is many times more than would normally have hatched naturally and reached this early stage.

All together, over 50,000 eggs were secured. They were transferred to troughs in the Commission's hatchery at Union City, where water conditions were more suitable. When they developed into fry and reached a length of one inch, most of them were released in waters where studies have shown an over-abundance of rough fish and stunted pan fish and too few predators.

Of those retained, all but about 500 were held only until they had reached fingerling size—two to three inches. To help feed this hungry horde, several hundred quarts of white sucker eggs were collected from streams that emptied into Lake Erie and hatched.

The 500 northerns that remained of the original 50,000 were nursed along to sizes between 8 and 10 inches—a feat of no little consequence. Raising any of the pikes—northern, musky or pickerel—past a length of two inches is ticklish business because once they attain that length their favorite food is each other. This necessitates constant sorting as to size because it doesn't take long for any one of them which is only a bit bigger than his brother, to get ideas about what he'll have for dinner.

By late September, the job for the year was done. The whole brood was stocked into waters where it



A YELLOW perch wears a plastic tag as a "by-product" of the northern pike egg stripping operations.

was felt they will do the most good—for the fishermen and for the job of helping to bring about a better balance of the pan fish and other fish populations.

In total, the effort is planned to become an annual double-barreled fish management program and one that is hoped will continue working in both directions.

And it forces agreement with Old Mose that: "Fishing is different than hunting!"

THIS GREAT northern had already spawned, "cheating" Larson of the eggs—but Al remarks, as he puts it back, "This one will give some fisherman a real tussle one day."





BOOK REVIEW

The Easy Way To Outdoor Cooking

By **JOSEPH D. BATES, Jr.**

32 pages. Illustrated with drawings. Copies can be obtained without charge from Joseph D. Bates, Jr., P. O. Box 414, White Plains, New York.

Outdoorsmen seeking simple methods and easy recipes to make their visit to the field or stream more enjoyable, should investigate this unique booklet on outdoor cooking.

Stressing the ease and value of cooking in or on metal foil, this clearly illustrated booklet tells how to prepare everything from a full meal to a snack, including a variety of hot and cold drinks.

Other valuable parts of the booklet include, ways to build open fires and camp stoves, how to clean fish, a list of essential cooking equipment, plus many other tested ideas and suggestions.

Outdoorsman's Guide

(Northeastern Pennsylvania Edition)

By **FRANK STOUT, GENE COLEMAN, ED ROGERS**

78 pages. Illustrated with photographs. Published by the NEPA Publishing Company, Factoryville, Pennsylvania, 1959. Price \$1.00.

Sportsmen seeking tips on good locales to pursue their fishing and hunting should add the Northeastern Pennsylvania Edition of the Outdoorsman's Guide to their library.

This handy booklet lists complete detailed road routes to 244 lakes and streams, and to 256,259 acres of public hunting lands in eight counties of the northeastern section of the Commonwealth.

In addition to the directory, there are authoritative articles on the Susquehanna and Delaware Rivers, in-

structional articles on trout and bass fishing, short section on first aid and survival in the outdoors and articles on deer, bear and wild turkey hunting.

This booklet, while of interest to all who hunt and fish in the Lackawanna, Luzerne, Monroe, Wayne, Pike, Susquehanna, Wyoming and Bradford Counties, is especially valuable to those who visit this area from other parts of Pennsylvania and adjoining states.

The Ocean of Air

By **DAVID I. BLUMENSTOCK**

Published by Rutgers University Press, New Brunswick, N. J., 1959. Price \$6.50.

A tremendous undertaking, written and revised over a 10-year period, that covers not only the story of the air about and above us, but the myriad ways in which the earth, its waters, its vegetation, its animals and people are affected by THE OCEAN OF AIR. This book is written by a scientist, for the layman. By far the greater part is in plain language that anyone with a high school education can understand clearly. It is only in the two chapters in which the author delves into the effect wind currents would have in the event of a nuclear war, and why, that he writes at a level of understanding a cut above the average reader.

It might be difficult to justify a declaration that the book should be in the library of every fisherman-reader of the ANGLER. It is, however, loaded with information of value to those lovers of the outdoors who also consider themselves conservationists, as its pages of facts, presented in very readable fashion, contain much that gives clues to the impacts of atmospheric conditions, and the weather that stems therefrom, upon the renewable resources of earth.

Not a book for light summer reading, THE OCEAN OF AIR instead is marvelously informative, mentally stimulating, and challenging fare for the long evenings of winter that are upon us.

A PENNSYLVANIA ANGLER
SPECIAL FEATURE

Pennsylvania Fish Commission
Public Fishing
Properties and Facilities

Compiled by
C. Robert Glover, Chief
Conservation Education Division

Property	County	General Location	Leased (L) Owned (O)	Property Size and Type			Facilities Fish Commission Constructed					
				Total Area acres (a) miles (m)	Lake (acreage)	Stream	Warm water (w) Trout water (t)	Access	Launching	Docking	Parking	Sanitary
Waynesboro Reservoir	Adams	9 mi. E of Mt. Alto off Rt. 233	L	35 a	26 a		t-w	X				
Gordon Lake	Bedford	4 mi. S of Bcdford Valley off Rt. 220	L	133 a	133 a		t-w	X				
Koon Lake	Bcdford	6 mi. S of Bedford Valley off Rt. 220	L	258 a	258 a		t-w	X				
Wills Creek	Bedford	in Hyndman on Rt. 96	E	.4 m		X	t					
Charming Forge Dam	Berks	1 mi. N of Womelsdorf on LR 06051	O	22 a	10 a		w	X			X	
Schuylkill Canal	Berks	2 mi. S of Hamburg off Rt. 122	O	12 a	12 a	X	w	X				
N. Br. Susquehanna R.	Bradford	2 mi. NE of Sayre on LR 08077	O	16.4 a			w	X	X		X	
Levittown Lake	Bucks	in Levittown off Rt. 13	O	30.7 a	20 a		w	X				
Glade Run Lake	Butler	1 mi. E of Cooperstown off Rt. 8	O	145 a	60 a		w	X	X		X	X
Duman Dam	Cambria	3 mi. N of Belsano on Rt. 933	O	58 a	20 a		w	X	X		X	X
Sinking Creek	Centre	½ mi. S of Tusseyville on TR 409	O	141 a			w					
Spring Creek	Centre	3 mi. S of Bellefonte off Rt. 545	O	5.3 m		X	t					
Icedale Lake	Chester	5 mi. E of Honeybrook off Rt. 322	O	50 a	18 a		w	X	X			X
Fishing Creek	Columbia	at Orangeville on Rt. 93	O	0.5 m			t					
Canadabta Lake	Crawford	1 mi. N of Lincolnville on LR 20139	O	4.5 a			w	X				
Conneaut Lake	Crawford	2 mi. S of Harmansburg off Rt. 618	O	2 a			w	X				
Cussewago Creek	Crawford	½ mi. W of Meadville on Rt. 98	O	6.1 a			w	X	X		X	
Drakes Mill Dam	Crawford	2 mi. NW of Cambridge Springs on Rt. 99	O	75 a	53+a		w	X				
French Creek	Crawford	1 mi. NE of Cambridge Springs on LR 20076	O	10 a			w	X	X		X	
French Creek	Crawford	at Saegerstown on Rt. 6	O	1 a			w	X	X		X	
French Creek	Crawford	2½ mi. S of Meadville off Rt. 322	O	15 a			w	X	X		X	
Sugar Lake	Crawford	5 mi. NE of Cochranton off Rt. 78	O	Lot			w	X	X	X	X	
Big Spring	Cumberland	4 mi. S of Newville on Rt. 891	L	.75 m		X	t	X			X	
Opossum Creek	Cumberland	6 mi. NW of Carlisle off LR 21033	O	214.18 a	60 a		w					
Yellow Breeches Creek	Cumberland	at Huntsdale off LR 21008	O	1.1 m		X	t	X				
Beaver Dam Run	Erie	¼ mi. S of Elgin off LR 25042	E	1.1 m		X	t	X				
S. Br. French Creek	Erie	1 mi. E of Elgin on LR 25046	E	2.7 m		X	t	X				
S. Br. French Creek	Erie	1 mi. E of Elgin on LR 25046	O	7.5 a			t	X			X	
Virgin Run Lake	Fayette	½ mi. N of Flat Woods on LR 26123	O	135 a	35 a		w	X	X		X	X
Tubbs Run	Forest	at Tionesta off Rt. 62	O	5.2 m		X	t	X			X	
Dickeys Creek	Franklin	4 mi. N of Mercersburg off Rt. 75	E	.9 m		X	t	X			X	
Letterkenny Reservoir	Franklin	3 mi. W of Roxbury off Rt. 641	L	128 a	54 a		t	X				
Meadow Grounds	Fulton	3 mi. W of McConnellsburg off Rt. 40	L	250 a			w					
Juniata River	Juniata	2½ mi. E of Mexico off Rt. 22	O	6 a		X	w	X	X		X	
Chapman Lake	Lackawanna	2 mi. N of Montdale off Rt. 247	O	Lot			t				X	
Rock Hill Dam	Lancaster	2.6 mi. N of Safe Harbor off LR 814	O	5 a		X	w				X	
Conestoga Creek	Lancaster	1 mi S of Millersville on LR 36008	O	1.0 m		X	w					

[illegible]

A PROGRAM TO INCREASE FISHING OPPORTUNITY IN PENNSYLVANIA

Pennsylvania is experiencing an ever increasing need for more places to fish by an ever increasing number of her citizens who are turning to the outdoors for recreation amid spreading urbanization, expanding industry and accelerated agriculture. These elements of spreading, expanding and acceleration indicate a virile and progressive people, but they have made serious inroads on both the quality and quantity of the "old fishing holes."

The Pennsylvania Fish Commission came to a full realization in 1956 that if the loss to progress of existing and accessible fishing water was to be encountered, a new and vigorous program had to be instituted. To the extent that its financial and other resources allowed, such a program was instituted and is continuing.

In the scope of that program are the following elements: building new lakes; acquiring and developing access areas along waters which, though open to public fishing, are little used for the want of places to get to them; seeking to add recreation as a consideration in flood control projects by the U. S. Army Engineers, the U. S. Soil Conservation Service and others; seeking to open to public fishing those water supply reservoirs in the Commonwealth whose waters receive complete treatment, reclaiming waters where rough fish or stunted fish populations rendered them of little value as fisheries; working with other state agencies, notably Highways and Mines, in the interest of maintaining or improving the quality of waters which are involved in their respective activities; acquiring existing water areas by purchase when costs are reasonable and clear titles are available, and extending the Commission's fishery management services to the Department of Forests and Waters and the Game Commission for waters under their jurisdictions and thereby striving to improve their fishing qualities.

The summary on these pages does not include all the waters involved in the efforts listed above. Rather it is only of properties owned, leased or otherwise controlled by the Fish Commission as of the end of 1959. Each year for the foreseeable future it will grow in total numbers, as the Commission plans the construction or major reconstruction of about three lakes each two years, and to acquire an average of about twenty new access sites annually, for development to useful stage as rapidly as practical.

Old favorite and long loved "fishing holes" that are lost to pollution and other causes cannot be compensated in full by the creation or availability of new. However, the progressive long range program of the Commission does show its awareness of the loss and of the need for replacement to the extent that funds will permit, for the social and economic benefit of Pennsylvanians for the present and future.

Add Life to Your Reel

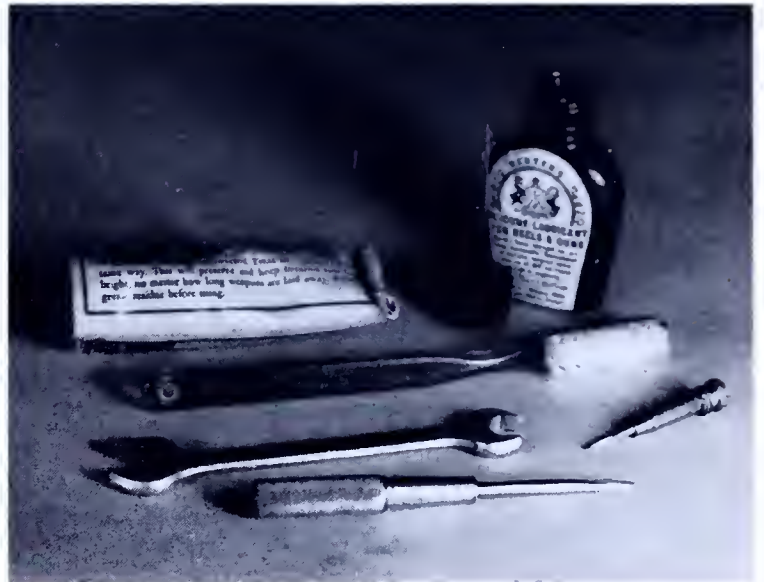
By **BILL COCHRAN**

I met him one warm summer day while fishing a large pond. He was a tall likeable fellow with a quick smile, but he wasn't catching fish. And no wonder! On every cast his reel sent up a loud mournful cry, and his lure splashed at his feet. Had I watched closely, I believe I could have seen a cloud of dust and perhaps even a few sparks fly with each cast, but the thing that impressed me most was the sorry job of casting he was doing. He was reaping the harvest of a neglected reel.

Fishing reels are a vital part of every fisherman's equipment, and they demand very little care for the service they give. A careful oiling at frequent intervals and a thorough cleaning at least once a year will keep a reel singing for a lifetime. Like any mechanical device, however, they can't be expected to operate smoothly without proper care.

Most reels can be oiled quickly, easily, and without special tools. A small bottle of lightweight oil is all that is needed. Regular reel oil is very good not only because it is the correct weight, but also because it comes with a one-drop wire applicator, which permits easy application. Oiling instructions come with most worthwhile reels, and it is wise to follow these closely the first few times you oil your reel. After this you will be able to oil it correctly on your own. If you have misplaced these instructions, you will be safe by oiling each moving part.

FISHING REELS demand very little care for the service they give. A frequent oiling and a thorough cleaning at least once a year is all that it takes.



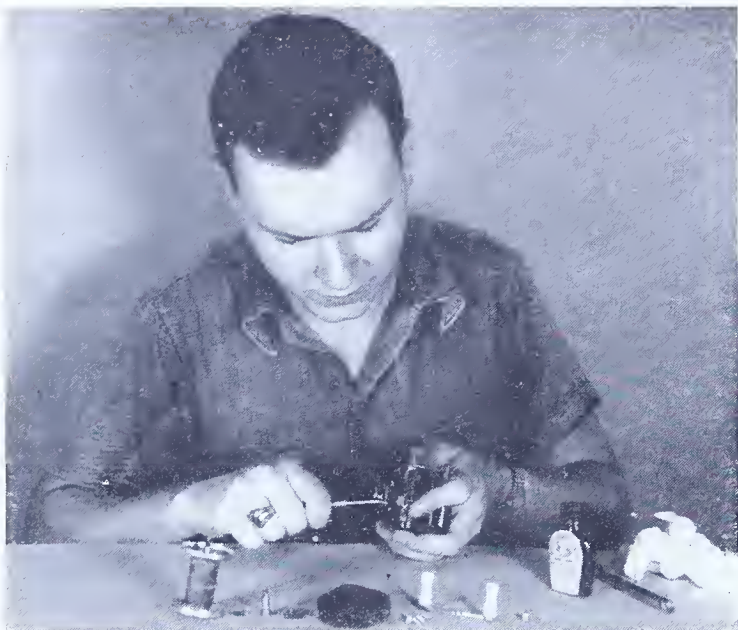
EQUIPMENT NECESSARY for a thorough cleaning and lubrication includes oil, grease, toothbrush, wrench and screwdriver.

It is important not to oil a reel too heavily. A drop or two is all that is necessary. Too much oil will collect dirt and gum up the works.

Some fishermen are hesitant when it comes to tearing apart their reels for a thorough cleaning and lubrication. Perhaps if their mechanical ability ends at unscrewing a jar lid, it is wise for them to leave the task to a better qualified person. Most fishermen, however,

WHEN TAKING apart your reel, be sure the screwdriver or wrench you use is the correct size. Otherwise you will do more damage than good.





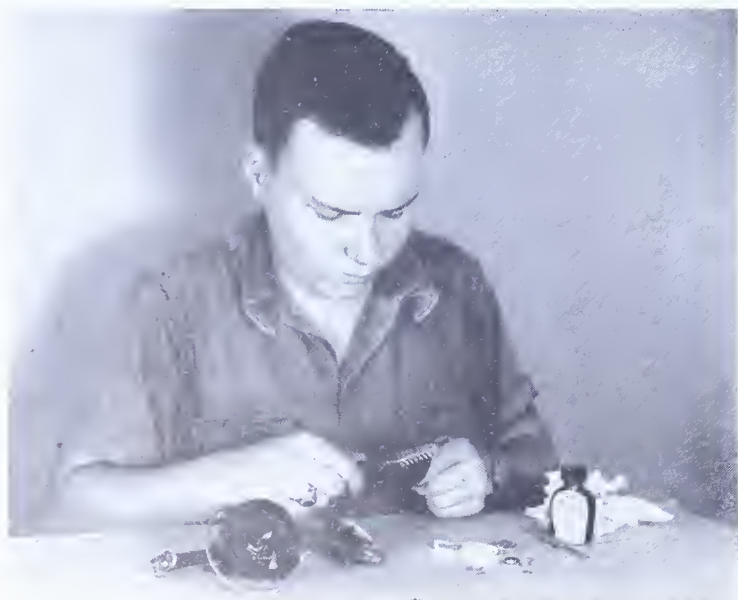
AS YOU take apart your reel, lay each piece down separately and in the order it came from the reel.

are curious creatures and delight in exploring the internal workings of a reel. Realizing this, many reel manufacturers have taken steps to build easy take-down features into their reels. This is a good practice. A fisherman never knows when he may get sand or grit in his reel and have to take it apart and clean it immediately to prevent serious damage.

A small flat tipped, square edged screwdriver and possibly a small wrench will be needed to take apart most reels. It is important that both of these instruments fit the screws and nuts of your reel. Tools of the wrong size will only do damage.

Start out with a clear work table, and as you take apart the reel, lay each piece down separately and in the order it came from the reel. This will enable you to replace each part correctly by simply putting it back together again in the reverse order of how you found it. Pay close attention to the sides of each part,

AN OLD toothbrush makes a good scrubbing tool for difficult parts to clean.



because sometimes they differ. Say if one side must be turned up a certain way in the reel, turn it up that way when you place it on your work table.

If you come across any parts that are worn and need replacing, order them at once. In fact, in the beginning if you know your reel is in foul mechanical shape, send it forthwith to the manufacturer or have your dealer do so. The manufacturer will be able to quickly and expertly repair it and for a very reasonable charge.

Be sure that each part is cleaned before putting the reel back together. Stubborn dirt and grease are easily removed with a soft cloth and a cleaning solvent. An old toothbrush makes a good scrubbing tool for parts which are difficult to clean such as gear teeth.



GREASE IS generally used on gears while oil is applied elsewhere. Too much of either will only collect unwanted dirt and grit.

Each moving part should be lubricated as it is fitted back into the reel. Grease is generally used on gears while oil is applied elsewhere. Once again, too much of either will only collect unwanted dirt and grit.

Each part of your reel should fit back into place without force. If force seems to be required, you will usually find that you are doing something wrong. Keep approaching a stubborn piece in a somewhat different manner until it slips into place.

Screws and nuts should not be tightened too hard. They are generally made of a fairly soft metal and may twist off if too much force is applied.

A freshly cleaned and oiled reel always fits nicely into a reel bag and should be kept there before and after use. It takes but little care and know-how to add life to your reel, and you'll have fun doing it.

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF

Pennsylvania Angler published **Monthly**
(Insert exact title of publication) (State exact frequency of issue)
at **Harrisburg, Pennsylvania** for **October** 1959
(Name of post office and State where publication has second-class entry)

1. The names and addresses of the publisher, editor, managing editor, and business managers are:

Name	Address
Publisher Pennsylvania Fish Commission	Harrisburg, Pennsylvania
Editor J. Allen Barrett	Harrisburg, Pennsylvania
Managing editor	
Business manager	

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.)

Name	Address
Commonwealth of Pennsylvania	South Office Building
Fish Commission	Harrisburg, Pennsylvania

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)

Name	Address
None	

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semiweekly, and triweekly newspapers only.)

J. Allen Barrett
(Signature of editor, publisher, business manager, or owner)

Sworn to and subscribed before me this 6th day of October, 1959

[SEAL]

L. H. Hulme

POD Form 3518
(Apr. 1958)

16-18720-6 (My commission expires 1960 Mo. 12 yr.)



"WHAT IS IT, DADDY?" inquires 2½-year-old David, son of Arnold Drooz, Chief Entomologist for the State Department of Forests and Waters.

Photo was taken by Mrs. Drooz on a family visit to Promised Land State Park.

Recreation Studies by the U. S. Forest Service Started at Warren

Outdoor recreation in the Northeast will come under study by the U. S. Forest Service through a recently reorganized research center at Warren, Pennsylvania. Announcement of this is made by Ralph W. Marquis, Director of the Northeastern Forest Experiment Station.

Other studies to be made by the Warren Center include wildlife habitat, forest management, and multiple use of forest lands.

This Center, first of its kind in the nation, was brought about because of the rapidly growing demands for recreational use of forest lands, both public and private. The need for research in recreation is especially pressing in the Northeast where every day more people with more leisure time are turning to outdoor activities.

Researchers at Warren, and in nearby areas of Pennsylvania and New York will attempt to solve the many problems involved in forest recreation. They

will try to find out how camping, hiking, picnicking, hunting, and fishing, and other outdoor activities, fit into the concept of multiple use of forest lands, and how one activity can harmonize with another.

This area was recently acquired by the Allegheny National Forest through donation. It will serve both the national forest and the research center as a place for the development of camping and picnicking sites, and for research and demonstrations relating to timber, wildlife management, and watershed management. Thus, it will be a demonstration area of the multiple use concept.

Evaluation will also be made of the recreational programs and experiences of various states, municipalities, private interests, and other federal agencies.

Hubert D. Burke, formerly with the Southern Forest Experiment Station, has been named by Dr. Marquis to head the Warren Research Center.

FINANCIAL REVIEW FOR THE FISCAL YEAR JUNE 1, 1958, TO MAY 31, 1959

By **PAUL J. SAUER, Comptroller**

When presenting a financial report it is customary to include certain remarks in connection therewith, in order that proper and uniform interpretation may be given to the financial statement and supporting schedules. With this objective in mind, the following comments are made with respect to related schedules, for the information of those who purchase a Pennsylvania fishing license, for all sportsmen and, in fact for all interested citizens.

carry on normal operations during the seven month period, September through March, when expenditures are greatly in excess of income.

4. The "Net Balance Available for Expenditure" during the fiscal year 1959-1960 is added to the estimated receipts and becomes part of the total amount on which the budget for the 1959-1961 Biennium is predicated.

SCHEDULE NO. 1			
CONSOLIDATED STATEMENT OF FINANCIAL POSITION			
AS OF MAY 31, 1959			
CASH			\$1,730,564.98
LESS: LIABILITIES AND WORKING CAPITAL			
VOUCHERS PAYABLE—PENNSYLVANIA FISH COMMISSION	\$ 86,605.28		
ENCUMBRANCES—PENNSYLVANIA FISH COMMISSION	398,694.98		
ENCUMBRANCES—DEPT. OF REVENUE	29,747.05		
RESERVE FOR WORKING CAPITAL	700,000.00	1,215,047.31	
NET BALANCE AVAILABLE FOR EXPENDITURE DURING			
FISCAL YR. 1959-60			\$ 515,517.67

The accompanying schedules and pie charts detail the fiscal operations of the Fish Commission for the second year of the 1957-1959 Biennium.

SCHEDULE NO. I.—This schedule reflects the net financial position of the Commission as of May 31, 1959. What would appear to be a substantial cash balance at the end of the fiscal year must not be looked upon as being a "surplus." Normal operating liabilities and working reserves at the end of the fiscal year must be supported and paid out of this cash balance. Only then may the net balance be considered as being available for expenditure during the following year. The ensuing explanations are offered in support of the attendant liabilities and reserves:

1. "Vouchers Payable" represents operating expenses which were processed for payment to the fiscal offices of the Auditor General and State Treasurer prior to May 31, 1959, but which were not paid as of that date.

2. "Encumbrances" represent definite expenditure commitments in the form of purchase orders and other duly executed contracts for the purchase of materials and supplies, fish food, fuel, rentals and similar operating expense items. The encumbrances incurred by the Department of Revenue, in the amount of \$29,747.05, are in connection with the printing and issuing of fishing and motorboat licenses.

3. "Reserve for Working Capital," in the amount of \$700,000.00, is necessary to enable the Commission to

SCHEDULE NO. II.—This schedule reveals that the Commission began operations on June 1, 1958, with a cash balance of \$1,560,689.16, from which is deducted the sum of \$93,527.00. This amount represents unpaid vouchers of the Commission which were on hand in the Fiscal Offices of the Auditor General and State Treasurer on May 31, 1958.

Total receipts from all sources amounted to \$2,567,418.97 during the year, so that a grand total of \$4,034,581.13 became available for the overall program.

Total expenditures (see footnote "a") by the Fish Commission amounted to \$2,176,673.62 during the year. To this figure we add the expenditures of other State departments, totaling \$213,947.81, which makes a grand total of expenditures of \$2,390,621.43 from the Fish Fund.

After deducting these expenditures from the total available funds, a balance of \$1,643,959.70 remains available for budgeting in the 1959-1961 Biennium, plus the sum of \$86,605.28, which represents unpaid vouchers at May 31, 1959. These unpaid vouchers (which are recorded as expenditures) are added to the available cash balance in order to reconcile with the actual Cash Balance in the State Treasury to the credit of the Fish Fund on May 31, 1959. This Cash Balance is subject to certain liabilities and reserves, as shown in Schedule No. I and as explained earlier.

(a) The word "expenditures," as used here, refers to amounts vouchered for payment and does not include commitments and encumbrances on the books as of May 31, 1959.

SCHEDULE NO. II
PENNSYLVANIA FISH COMMISSION
STATEMENT OF REVENUE, EXPENDITURES AND CASH BALANCES
FISCAL YEAR JUNE 1, 1958, TO MAY 31, 1959

REVENUE

Cash in State Treasury to Credit of "Fish Fund" June 1, 1958	\$1,560,689.16
Less: Unpaid Vouchers in Fiscal Offices as of May 31, 1958	-93,527.00
Net Cash Available for Expenditure as of June 1, 1958	\$1,467,162.16
Receipts June 1, 1958, to May 31, 1959	
Resident Fishing Licenses	\$2,016,712.11
Non-Resident Fishing Licenses	94,674.00
Non-Resident Trout Stamps	3,573.20
Special Eel Licenses	6.00
Motorboat Licenses	130,349.25
Tourist Fishing Licenses	30,990.25
Lake Erie Licenses	2,602.00
Commercial Hatchery Licenses	4,855.00
Fee Fishing Lake Licenses	6,625.00
Fish Law Fines	33,909.00
Motorboat Fines	5,675.00
Interest on Securities	1,213.33
Interest on Deposits	22,795.40
Sale of Unserviceable Property (P & S)	2,041.82
Contributions for Restocking Streams	24,408.06
Contributions from Federal Government (D-J)	163,906.27
Sale of Publications	17,929.82
Rental of Fish Commission Property	4,291.50
Miscellaneous Revenue—Fish Commission	828.32
Miscellaneous Revenue—Revenue Department	26.19
Refund of Expenditures—Not Credited to Allocations	7.45
Sale of Confiscated Property	—0—
Total Receipts from all Sources	2,567,418.97
Total Funds Available during Year	\$4,034,581.13

CLASSIFICATION OF EXPENDITURES BY ORGANIZATIONAL UNITS

Classification of Expenditures	Exec. Office & Acct'g	Administration & Service	Propagation & Distribution	Fish Management & Research	Law Enforcement	Conservation Education	Land & Water Management	Commission Total
Salaries	\$ 59,190.55	\$ 31,701.50	\$574,638.60	\$124,136.48	\$239,802.75	\$ 26,893.51	\$ 54,433.08	\$1,110,796.47
Wages	886.20	2,460.30	37,803.45	39,771.39	26,923.07	2,233.75	88,791.69	198,869.85
Printing & Stationery	337.49	26,702.43	919.35	711.99	369.04	31,261.44	1,173.70	61,475.44
Food & Forage	—0—	25.80	204,760.96	3,060.50	—0—	—0—	—0—	207,847.26
Material & Supplies	288.34	1,259.64	37,882.06	17,381.28	3,477.64	2,946.90	55,348.71	118,584.57
Fees & Professional Services	183.00	3.00	—0—	1,300.00	494.50	9,431.45	4,076.05	15,488.00
Traveling Expenses	10,574.71	317.72	11,735.17	12,177.68	85,646.56	2,674.61	13,108.64	136,235.09
Motor Vehicle Supplies & Repairs	730.10	—0—	25,445.04	5,045.07	—0—	191.50	3,507.93	34,919.64
Postage	471.72	917.00	880.55	430.00	1,551.32	2,888.74	187.00	7,326.33
Telephone & Telegraph	3,277.96	810.56	4,884.20	3,194.71	6,874.39	928.53	1,517.22	21,487.57
Newspaper Advertising & Notices	—0—	—0—	—0—	—0—	—0—	—0—	—0—	—0—
Light, Heat, Power and Fuel	—0—	—0—	33,229.64	3,457.60	226.26	—0—	170.78	37,084.28
Contracted Repairs	178.45	23.04	1,756.53	920.31	692.30	75.53	690.25	4,336.41
Rent of Real Estate	—0—	—0—	2,435.00	1,926.50	2,473.50	—0—	27.00	6,862.00
Rent of Equipment	720.00	125.80	1,240.24	866.75	10.00	862.25	57,792.47	61,617.51
Insurance and Fidelity Bonds	432.42	142.13	4,252.51	781.02	1,286.36	120.42	619.69	7,634.55
Other Operating Services	13,349.29	924.83	800.68	364.07	783.68	226.33	743.63	17,192.51
Motor Vehicles	1,090.76	—0—	19,482.51	20,321.03	—0—	1,559.24	6,384.54	48,838.08
Equipment & Machinery	4,093.47	—0—	4,333.98	12,101.83	1,663.35	6.00	3,363.22	25,561.85
Land and Waters	—0—	—0—	—0—	—0—	—0—	—0—	54,038.21	54,038.21
Buildings & Structures	—0—	—0—	—0—	—0—	—0—	—0—	—0—	—0—
Non-structural Improvements	—0—	—0—	—0—	—0—	—0—	—0—	—0—	—0—
Grants & Subsidies	—0—	—0—	—0—	—0—	—0—	—0—	—0—	—0—
Refunds of Receipts	478.00	—0—	—0—	—0—	—0—	—0—	—0—	478.00
TOTAL EXPENDITURES BY FISH COMM.	\$ 96,282.46	\$ 65,413.75	\$966,480.47	\$247,948.21	\$372,274.72	\$ 82,300.20	\$345,973.81	\$2,176,673.62

Plus: Expenditures by Other State Departments	
Department of Revenue—Printing and Issuing Fishing and Motorboat Licenses and tags (*)	111,644.31
Department of State—Contributions to State Employees' Retirement System (*)	71,887.50
Treasury Department—Replacement Checks (*)	—0—
Department of Labor and Industry—Contributions for Social Security (*)	30,416.00
TOTAL EXPENDITURES	-2,390,621.43
Cash Balance May 31, 1959, Available for Expenditure in the 1959-60 Fiscal Year	\$1,643,959.70
Plus: Unpaid Vouchers in Fiscal Offices as of May 31, 1959	86,605.28
Cash Balance in State Treasury to Credit of "Fish Fund" May 31, 1959	\$1,730,564.98

(*) These items are paid out of the "Fish Fund" upon requisitions drawn by the Department of Revenue, Department of State and the Treasury Department and are included to complete the picture of the "Fish Fund" finances.

SCHEDULE NO. III.—This schedule is presented in two parts and is intended to show that the Com-

mission has complied with the Legislative mandate of Act No. 330, Session of 1957, P.L. 619 as it amended

SCHEDULE NO. III

EXPENDITURES IN COMPLIANCE WITH ACT NO. 330—SESSION OF 1957

Act No. 330, Session of 1957, P. L. 619, amends the Act of May 2, 1925, P. L. 448. This Act became effective September 1, 1957, and provides that the sum of One Dollar (\$1.00) from each resident and non-resident fishing license fee shall be used exclusively for (I) the acquisition, leasing, development, management and maintenance of public fishing waters and of areas for providing access to fishing waters and the carrying out of lake and stream reclamation and improvement; (II) the rebuilding of torn-out dams and (III) the study of problems related to better fishing.

For the Calendar Year 1958—January 1, 1958 to December 31, 1958

Account Classification	Fishery Management and Fish Management Research	Reclamation of Lakes and Improvement of Streams	Acquisition of Lands and Fishing Waters	Management and Maintenance of Lands and Fishing Waters	Development of Lands and Fishing Waters	Totals
SALARIES AND WAGES	\$ 66,599.12	\$ 20,389.74	\$ 15,334.39	\$ 9,729.27	\$ 78,266.45	\$190,318.97
Salaries	59,295.48	8,134.60	14,295.70	4,021.43	4,557.65	90,304.86
Wages	7,303.64	12,255.14	1,038.69	5,707.84	73,708.80	100,014.11
OTHER OPERATING EXPENSES	20,230.57	9,036.36	8,928.79	6,439.45	120,664.21	165,299.38
Printing, Binding, Stationery	220.63	30.60	576.73	400.03	—0—	1,227.99
Food and Forage	—0—	—0—	—0—	—0—	—0—	—0—
Material and Supplies	4,903.66	5,616.87	15.80	4,883.32	49,884.75	65,304.40
Fees	—0—	—0—	3,526.32	—0—	—0—	3,526.32
Traveling Expenses	9,925.24	2,307.04	2,836.42	520.78	7,419.39	23,008.87
Motor Vehicle Supplies and Repairs	170.43	537.60	641.96	85.83	1,285.27	2,721.09
Postage	189.15	—0—	30.00	4.00	3.00	226.15
Telephone and Telegraph	1,670.42	16.20	461.37	—0—	91.76	2,239.75
Newspaper Advertising and Notices	—0—	—0—	—0—	29.50	—0—	29.50
Light, Heat, Power, Water, Sewage and Fuel	613.91	—0—	—0—	—0—	12.28	626.19
Contracted Repairs	290.68	297.40	4.00	—0—	3,805.77	4,397.85
Rent of Real Estate	1,801.00	—0—	1.00	25.00	—0—	1,827.00
Rent of Equipment	—0—	198.00	—0—	355.00	57,625.32	58,178.32
Insurance, Surety and Fidelity Bonds	282.36	32.65	110.42	14.92	333.98	774.33
Other Operating Services and Expenses	163.09	—0—	724.77	121.07	202.69	1,211.62
EQUIPMENT	20,522.94	41,026.21	3,165.83	2,615.42	2,978.79	70,309.19
Motor Vehicles	12,311.49	8,914.65	1,559.24	1,467.97	1,798.09	26,051.44
Other Equipment and Machinery	8,211.45	32,111.56	1,606.59	1,147.45	1,180.70	44,257.75
OUTLAY FOR LANDS, STRUCTURES AND IMPROVEMENTS	—0—	—0—	26,787.55	—0—	—0—	26,787.55
Land	—0—	—0—	26,787.55	—0—	—0—	26,787.55
TOTALS	\$107,352.63	\$ 70,452.31	\$ 54,216.56	\$ 18,784.14	\$201,909.45	\$452,715.09*

* During the period covered there were no expenditures for the rebuilding of torn-out dams.

STATEMENT OF RECEIPTS AND EXPENDITURES—ACT NO. 330—SESSION OF 1957

Calendar Year	Resident Licenses Sold	Non- Resident Licenses Sold	Minimum To Be Expended	Expenditures	Over (°) Or Under (—) Minimum	Cumulative Over (°) Or Under (—)
1957 (9-1 to 12-31)	4,444	165	\$ 4,609.00	\$142,467.00	\$137,858.00*	\$137,858.00*
1958	621,692	16,294	637,986.00	452,715.09	185,270.91—	47,412.91—

the Act of May 2, 1925, P.L. 448. Receipts and expenditures are shown on a calendar year basis in order to conform with the license year.

The first part of the schedule shows expenditures in detail by type of activity and by class of expenditure. The second part of the schedule summarizes the earmarked receipts and expenditures, in compliance with the provisions of the Act. While it would appear that the Commission is underexpended, the fact is that there were more than enough encumbrances on May 31, 1959, to offset this apparent underexpenditure. For all practical purposes, the Commission had overexpended in the amount of \$559,101.78 when Act No. 283 was amended on September 1, 1957, by Act No. 330 and this overexpenditure, with respect to Act No. 283, could be rightfully applied to Act No. 330 because the overexpenditure covered activities identical to those stipulated in Act No. 330. However, it is the desire of the Commission to report expenditures in compliance with Act No. 330 beginning with the inception of the Act on September 1, 1957. This will be borne out in future reports.

CHARTS—Pie charts covering all receipts and expenditures are presented to show the complete picture of the Fish Commission's operations in graphic form.

AUDIT OF THE FUND

Under the provisions of Article IV, Section 402 of the Fiscal Code, the Auditor General is required to audit the accounts and affairs of all State Departments, Boards and Commissions at least once each year. The last formal audit of the Commission covered the fiscal year ended May 31, 1958, and we are pleased to report all accounts were found to be in order.

Additional safeguards and controls imposed upon all Departments, Boards and Commissions are:

1. The mandatory requirement that all invoices, payrolls and other operating expenses must be audited by the Auditor General and State Treasury Departments before payment.
2. The mandatory reporting daily, of all financial transactions to the Governor's Bureau of Accounts and Controls.
3. The control exercised by the Governor's Budget Secretary over all requests for quarterly budget allotments and all other budget matters.
4. The periodic verification of Departmental Accounts with those maintained by the Auditor General's Department, the State Treasury and the Governor's Bureau of Accounts and Controls.

Fish Commission Accomplishments

June 1, 1958, to May 31, 1959

By WILLIAM VOIGT, Jr.

Executive Director, Pennsylvania Fish Commission

The fiscal year covered by this report saw a continuation of the Pennsylvania Fish Commission's new approaches in the areas of fishery management, research, law enforcement, acquisition and conservation education. Accomplishments in these programs were many and of a constructive nature.

While much of the work done was a continuation, implementation or acceleration of earlier plans, some accomplishments were of newer origin.

Trout rearing and stocking was on a level somewhat above that of last year. Supplementing this was an increase in the hatching, rearing and distribution of muskellunge. An adequate source within the state of walleye eggs was found, for the first time in history. For the first time, also, Kokanee, a landlocked form of red or sockeye salmon, was introduced in several lakes on an experimental basis. The transfer of fish from Lake Erie to inland waters was undertaken with Commission personnel and gear.

The warden force and other Commission personnel completed an improved annual school at Pleasant Gap. Also, by selecting only outstanding candidates for warden trainees and providing improved courses of instruction, the Commission further raised the calibre of its enforcement work.

Acquisition proceeded on land areas deemed suitable for new lake sites and of existing lakes. Many properties were acquired during the year and negotiations were advanced on numerous others in several counties. Access areas to open public fishable reaches of rivers and lakes were also acquired in substantial number or made available through leasing or arrangements with riverside communities and other agencies. At year's end more than two dozen additional were in various stages of acquisition or leasing.

Techniques and procedures for adequate maintenance of fishing property were established and initiated.

Among the accomplishments of newer origins was the big-water type electric shocker for fish salvage and management. The shocker was well on its way

towards practical application before the end of the year. Although refinements were found necessary and further experimentation was deemed desirable, much progress has been made towards providing one of the most magnificent new tools for the fishery manager. Stream shocking gear likewise was improved and made more effective for management activities and for public demonstrations of animal life present in smaller streams at various times of the year.

Newly developed also was an improved type of boat launching ramp, made of reinforced concrete slabs.

Repeated heavy pollutions that resulted in large fish kills continued to plague and frustrate the Commission and the fishermen.

A more detailed summary of the accomplishment highlights are presented in the following division-by-division account:

HATCHERY AND DISTRIBUTION

Equipment has been purchased for the installation of the jar method of hatching trout eggs at all of the trout hatcheries. Trout eggs will be hatched almost entirely by this method, starting with the fall of 1959.

Concrete tanks are replacing worn out wooden troughs at some of the hatcheries, where the shallow troughs are no longer required for hatching purposes. Instead, the deeper concrete tanks will be used to hold trout fry a bit longer than heretofore in an environment more favorable to greater survival and better growth.

Production of muskellunge was increased.

Another Pennsylvania first was effected with the procurement of Kokanee eggs from the state of Montana. They were hatched successfully at the Pleasant Mount station and stocked as fry and fingerling on an experimental basis in five lakes in Centre, Fulton, Union, Wayne and Wyoming Counties.

Following is a summary of the fish stocked in the

waters of Pennsylvania during the period June 1, 1958, to May 31, 1959.

Species	Approximate Size	Number	Weight in Pounds
Brook Trout	6-20	572,716	177,046.95
Brown Trout	6-26	1,022,997	364,531.31
Rainbow Trout	6-30	591,431	248,395.06
Total Legal Trout		2,187,144	789,973.32
Walleye	11-19	1,012	1,972.07
Smallmouthed Bass	7-16	4,864	6,368.52
Largemouthed Bass	4-16	7,769	1,834.42
Muskellunge	19-45	27	192.75
Catfish	8-26	161,610	90,881.36
Bluegills	4-10	26,777	7,927.71
Pickrel	17-23	162	315.75
Yellow Perch	7-12	10,132	2,437.83
White Crappie	7½-12	14,754	14,751.23
Carp	16-18	2,300	8,050.00
Brown Bullheads	8-12	11,226	4,897.84
Rock Bass	6½-9½	1,339	396.67
White Bass	6½-13	1,587	994.48
Sheepshead	14-18	828	1,490.25
Blue Pike	15-17	1	1.75
Smelt	6-9	3,500	278.41
Golden Shiner Minnows	3-8	4,000	300.41
Fathead Minnows	2-3	9,400	39.32
Total Adult Fish and Weight		2,448,432	933,122.09

Species	Approximate Size	Number	Weight in Pounds
Brook Trout	fingerling	1,340,155	2,234.54
Brown Trout	fingerling	530,815	1,190.60
Rainbow Trout	fingerling	144,655	790.16
Lake Trout	fingerling	12,980	376.73
Kokanee	fingerling	421,000	107.56
Total fingerling Trout		2,449,605	4,699.58
Walleye	fingerling	21,730	105.11
Walleye	fry	1,150,000	.00
Smallmouthed Bass	fingerling	33,100	377.59
Largemouthed Bass	fingerling	126,055	2,030.32
Muskellunge	fingerling	7,565	389.84
Muskellunge	fry	10,000	.00
Sunfish	fingerling	5*	.10
Northern Pike	fingerling	430	67.19
Northern Pike	fry	16,835	.00
Eels	elvers	1,000,000	.00
		4,815,325	7,699.74

* Exhibition.

FISHERY MANAGEMENT
AND RESEARCH

Progress and important accomplishments in the fields of fish research and fisheries management are as follows:

The new method of incubating trout eggs developed at the Benner Spring Fish Research Station and successfully applied was released to the Commission's production hatcheries. This advancement, which saves

hatchery space and requires less water, involves the use of jars instead of trays for egg incubation. The method also entails the use of formalin in proper concentrations as an egg fungicide which eliminates the greater portion of the time consuming procedure of picking dead eggs by hand.

Colorants were introduced into trout diets to produce more highly colored trout for stocking. Research, however, is being continued with the hope that colorants may be added to the pellet type food for preparations.

A number of commercial pelleted fish foods were evaluated in the search for a "complete diet" pellet for trout.

The development of a big-water electro-fishing unit using pulsed AC current was undertaken in cooperation with Pennsylvania State University. Upon perfection this gear will replace or supplement the DC shocking equipment presently in use.

Studies continued on the "fish for fun" project in north central Pennsylvania, initiated and developed by the biological staff and now in its second year.

The first portion of a two-year study to determine the relative efficiency of fall vs. spring plantings of trout was initiated. At present, the rate of return of fall stocked trout has been found to be about one-half that of those stocked in the spring.

The research program on Lake Erie commercial and sport fisheries, including the attempt to establish rainbow trout runs in streams tributary to Lake Erie, was continued.

A project was undertaken to determine the value of planting fry and fingerling trout in streams. Though early findings do not show such plantings to be of material value, the study will be continued.

Special creel censuses to evaluate management plans, to determine fishing pressure and fish catches, were undertaken on Lake Somerset, Somerset County; Red Bank Creek, Jefferson County (in cooperation with the U. S. Fish and Wildlife Service), and on Lake Clark on the lower Susquehanna River (a co-operative study under the direction of the Susquehanna River advisory committee).

Surveys of lakes and streams to determine proper fish management methods were continued. One large lake and several ponds were chemically treated and stocked according to management plans.

Research studies were continued in several lakes where primary emphasis is being placed on establishing predator game species following chemical reclamation.

Studies on various weedicides and mechanical weed cutters were initiated. One lake was successfully treated for weed control and cost analysis procedures initiated.

The first experiment was conducted with cement stack dust on Lake Jean in Luzerne County to determine its effectiveness in reducing the natural tannic acidity of its waters and in improving the fish producing capacity of this and other similarly affected lakes.

LAW ENFORCEMENT

All wardens in whose districts pleasure boating is enjoyed received instruction and additional training in boats, boat handling, rules of the road and enforcement procedures.

A week-long special technical training course on fish was given for the first time at the Benner Spring Research Station. Instruction consisted of basic information on limnology, water chemistry, fish diseases, fishery management and other subjects related to fish and fishing. The course was taken by six warden trainees and six regular wardens. As a result of the benefits derived, it is now planned to expand the course and to conduct it on an annual basis.

As a result of these and other recently instituted training procedures for both warden trainees prior to assignment and regular wardens, not only have better performance records been compiled in enforcement, pollution control and education, but the participation of the warden force in other phases of the Commission's activities has been broadened.

CONSERVATION EDUCATION

Notable forward strides were made in both the present and future phases of an improved fisheries education program, including information on the activities of the Fish Commission. Advancements in nearly every means of conveying knowledge to the fishing public have been accomplished. These means in general include news releases to press, radio and TV; the publication of the PENNSYLVANIA ANGLER; responses to individual inquiries; publication of specialized literature—maps, booklets, etc.;—production of slide lectures, and the construction of educational exhibits.

Among the "present" phases, during the past year were the following: A total of 57 news and information releases prepared and distributed state-wide. In addition, the division played a lesser role in the distribution of several hundred other local news items;

A second edition of "Pennsylvania Fishes" was published;

The first block of 19 waters-highways maps was made available to the fishing public, with the source material for the remaining 27 maps sufficiently advanced to assure the availability of every county map by mid-March, 1960. This map project enjoys the rare distinction of a Resolution of Commendation by the Senate of Pennsylvania;

The slide lecture "The Fishery Manager in Pennsylvania" was revised. The production of a second

slide lecture "Pymatuning" was completed. Copies of each have been placed with the Commission's six regional offices, through which bookings for the lectures by school, civic, sportsmen's and other groups may be made;

The first series of titled slides was produced to put the Commission's admatic machines into service at shows and exhibits;

The "pilot" model aquarium for the display of live fish of Pennsylvania was constructed and exhibited on several occasions. Suggested refinements will be built into two additional aquarium units under construction for use by early 1960;

A photo service on Fish Commission activities and accomplishments to newspapers and other publications was instituted;

Art panels describing Commission publications were produced with educational exhibits at fairs, shows, etc.;

Stream Improvement panel exhibits produced earlier were refurbished and put back into service.

Meanwhile, of the "future" phases of the education and information program, a planned agenda of getting film footage needed to produce the motion picture film "Fishing in Pennsylvania" was continued, as was the accumulation of color slide subjects for new slide lectures. In both instances the vagaries of weather and other conditions dictate the pace of acquiring suitable pictures and the eventual completion dates of the respective productions. Slide lecture subjects in the making include: "Fishes of Pennsylvania," "The Work of the Warden," and "The Role of Research";

Two additional titled slide sets, the subjects of which are "The Benner Spring Research Station," and "Fishes of Pennsylvania," were placed in line for final production and use in the admatic machines by late 1959;

Preliminaries were completed for three new Commission publications—"The Public Fishing Properties and Facilities of the PFC," "Administering a State's Fishery—It's a Complex Business," and "The Hatcheries and Their Fishes."

Looking to the 1961-62 period, early plans were laid for compiling lists of state streams and lakes and attending data and the publication of same in book or books form. These similar to "Pennsylvania Fishes," and the "Waters-Highways Maps" currently being produced, will be sold by the Commission at a price which, in conformance with state law, will defray production and distribution costs.

REAL ESTATE

Property investigations, agreements, options, acquisitions and maintenance concerned with access areas, streams, new lake sites and existing lakes were all stepped up during this fiscal year to conform with Fish Commission policy and legislation to increase

the places to fish in Pennsylvania. This increased activity has been made possible by the addition of three persons to the staff of the division, one on Real Estate and two on Maintenance.

During the year 16 access sites were acquired by agreements with communities, the Pennsylvania Game Commission, Pennsylvania Highways Department, the U. S. Army, the Safe Harbor Water Company and the Pennsylvania Railroad.

Included were properties as follows: on the Susquehanna River at Goldsboro, New Cumberland and Wrightsville in York County, at Laceyville in Wyoming County, West Fairview in Cumberland County, Hallstead in Susquehanna County, and Northumberland in Northumberland County; on the Allegheny River at Oil City and Franklin in Venango County; on the Schuylkill at Pennhurst in Montgomery County; the Clarion River at Mill Creek in Clarion County; on Lake Eric at Erie, Lake City and North East in Erie County; at Upper Woods Pond in Wayne County, and an addition to the Muskrat Springs access area in Juniata County.

An additional 9 access sites were purchased. Included were sites on the Delaware River and the Lackawaxen Creek in Wayne County; the Conodoguinet Creek in Cumberland County; the Cussewago Creek and Canadohta Lake in Crawford County; on Musser's Dam in Snyder County; the North Branch of the Susquehanna River in Bradford County; on Duck Harbor Pond in Wayne County, and land for an access road to Spring Creek in Centre County. The latter property was acquired by agreement with the Pennsylvania Department of Justice.

Public fishing rights on five water reservoirs providing an additional 747 acres of fishing water were negotiated. These included the water supply reservoirs of North East Borough in Erie County, Chambersburg in Franklin County, Waynesboro in Adams County, and Evitts Creek Water Company (two) in Bedford County.

New lake sites acquired include those on Opossum Creek in Cumberland County, at Mountain Springs in Somerset County, and the Meadow Grounds on Game Land No. 53 in Fulton County.

Land acquisitions to enlarge present Fish Commission-owned lakes were completed at Belmont Lake and Long Pond in Wayne County.

Investigations were made and land options obtained on eight potential lake sites.

Negotiations were initiated for the purchase of three existing lakes.

Sixty Fish Commission properties were identified by signs at the properties and directional signs on leading roads.

A property maintenance program was initiated with two men fully equipped now at work.

Investigations and negotiations were initiated for the possible acquisition of 42 more river and lake access sites, 11 more new lake sites and 5 existing lakes.

ENGINEERING

Preliminary engineering surveys were conducted on 40 sites in 24 counties. Included in these studies were potential access areas on lakes and rivers and potential lake sites. Though as a result of these studies, some sites were found not feasible for their proposed type of development, many are now either developed or in various stages of acquisition or development.

Land surveys were completed on four proposed lake sites or existing lake properties as follows: Canonsburg Lake in Washington County, Belmont Lake in Wayne County, Mountain Springs in Luzerne County and Opossum Creek in Cumberland County.

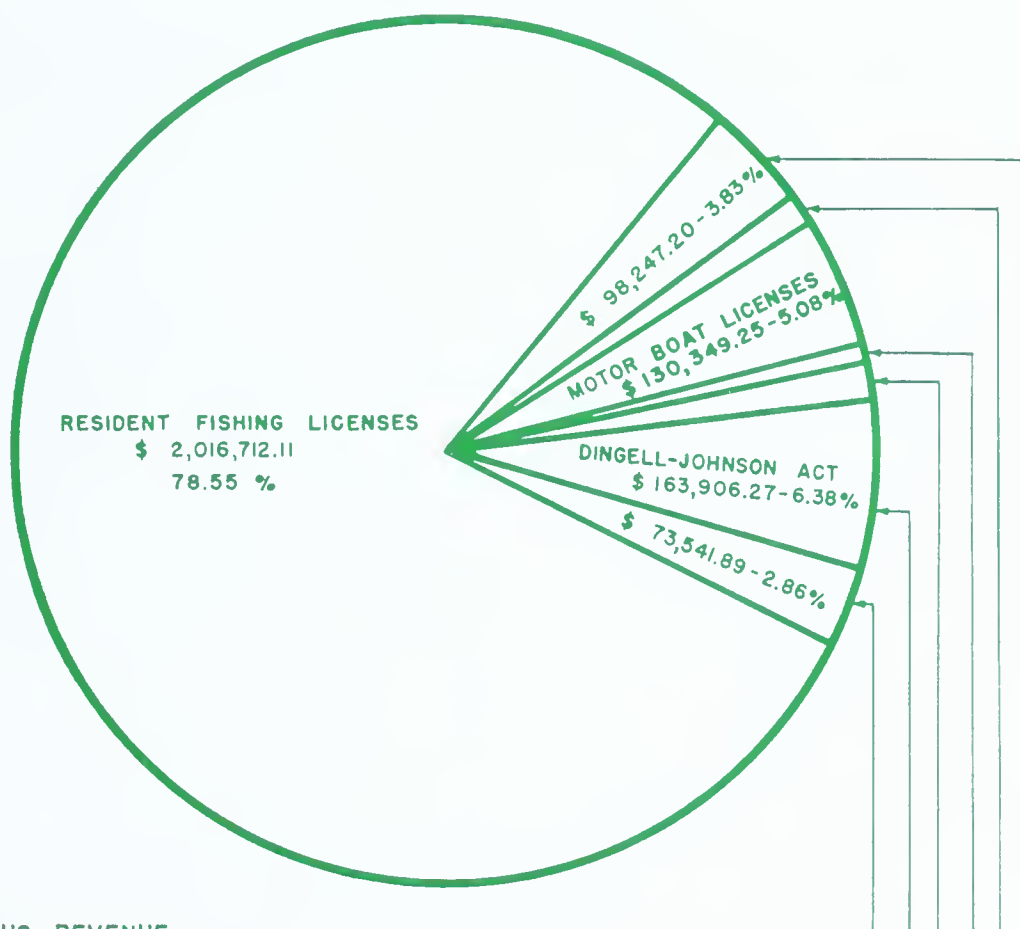
Engineering plans and specifications were completed for two new lakes and three improvement projects at Commission hatcheries.

Fourteen access sites on rivers and lakes were improved as follows: Upper Woods Pond, Wayne County—30-car parking area and boat launching ramp; Miller Pond, Wayne County—15-car parking area and boat launching ramp; Reining's Pond, Wayne County—boat launching ramp; Greeley Lake, Pike County—10-car parking area and boat launching ramp; Fairview Lake, Pike County—12-car parking area and boat launching ramp; Tunkhannock access area, Wyoming County—15-car parking area and boat launching ramp; Muskrat Spring, Juniata County—25-car parking area and boat launching ramp; Silvis tract, Perry County—25-car parking area and boat launching ramp; Sugar Lake, Crawford County—20-car parking area and boat launching ramp; French Creek, Crawford County, Cambridge Springs tract—20-car area and boat ramp; French Creek, Crawford County, Gongaware tract—20-car parking area and boat ramp; French Creek, Crawford County, Saegerstown tract—30-car parking area and ramp; Spring Creek access, Centre County—1-mile access road; Dutch Fork parking area, Washington County—50-car parking area; Oil City parking area and boat ramp, Venango County—parking area and boat ramp.

The new Dutch Fork Lake in Washington County was completed and the Belmont Lake reconstruction in Wayne County was 80 per cent completed.

Stream improvement work was completed or in progress on sections of eight streams as follows: Dunbar Creek in Fayette County—1½ miles; East Licking Creek in Mifflin and Juniata Counties—3¼ miles; Medix Run in Elk and Clearfield Counties—3¼ miles; Blue Eye Run in Warren County—¾ mile; Little Bear Creek in Lycoming County—1 mile; East Branch Dyberry Creek in Wayne County—¾ mile; Little Lehigh Creek in Lehigh County—1½ miles; Dickey's Run in Franklin County—¾ mile.

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA FISH COMMISSION
SOURCES OF REVENUE TO THE FISH FUND
RECEIPTS FOR THE FISCAL YEAR JUNE 1, 1958 TO MAY 31, 1959
TOTAL- \$ 2,567,418.97



MISCELLANEOUS REVENUE

INTEREST ON SECURITIES-----	\$ 1,213.33 - .04 %
INTEREST ON DEPOSITS-----	\$ 22,795.40 - .89 %
RENTAL OF FISH COMMISSION PROPERTY-----	\$ 4,291.50 - .17 %
SALE OF UNSERVICEABLE PROPERTY (P & S) ---	\$ 2,041.82 - .079 %
CONTRIBUTIONS FOR RESTOCKING STREAMS----	\$ 24,408.06 - .9507 %
SALE OF PUBLICATIONS-----	\$ 17,929.82 - .70 %
MISCELLANEOUS RECEIPTS-----	\$ 845.51 - .03 %
REFUNDS OF EXPENDITURES-NOT CREDITED----	\$ 7.45 - .0003 %

CONTRIBUTIONS FROM FEDERAL GOVERNMENT DINGELL-JOHNSON ACT

FINES -----	\$ 39,584.00 - 1.54 %
FISH LAW FINES-----	\$ 33,909.00 - 1.32 %
MOTOR BOAT FINES-----	\$ 5,675.00 - .22 %

MISCELLANEOUS LICENSES -----	\$ 14,088.00 - .55 %
SPECIAL EEL LICENSES-----	\$ 6.00 - .0002 %
LAKE ERIE LICENSES-----	\$ 2,602.00 - .10 %
COMMERCIAL HATCHERY LICENSES-----	\$ 4,855.00 - .1898 %
FEE FISHING LAKE LICENSES-----	\$ 6,625.00 - .26 %

TOURIST FISHING LICENSES -----	\$ 30,990.25 - 1.21 %
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NON-RESIDENT LICENSES

NON-RESIDENT FISHING LICENSES-----	\$ 94,674.00 - 3.69 %
NON-RESIDENT TROUT STAMPS-----	\$ 3,573.20 - .14 %

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA FISH COMMISSION

HOW THE FISHERMAN'S AND BOATER'S DOLLAR WAS SPENT

EXPENDITURES FOR THE FISCAL YEAR JUNE 1, 1958 TO MAY 31, 1959

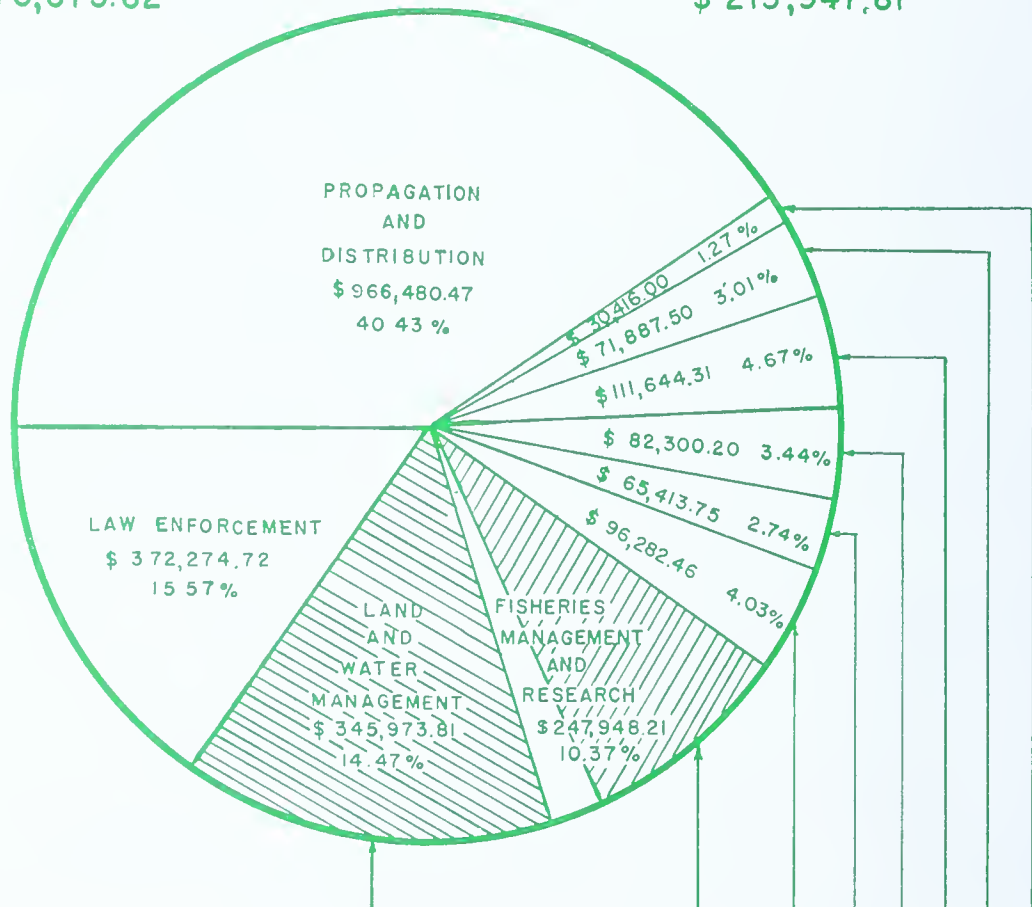
TOTAL- \$2,390,621.43

SPENT BY FISH COMMISSION

\$2,176,673.62

SPENT BY OTHER STATE DEPT'S

\$213,947.81



EXPENDITURES IN COMPLIANCE
WITH ACT NO 330, SESSION OF 1957 - \$538,544.87

EXECUTIVE OFFICE

1-DIRECTOR'S OFFICE

2-COMPTROLLER'S OFFICE

ADMINISTRATION AND SERVICE DIVISION

CONSERVATION EDUCATION DIVISION

DEPARTMENT OF REVENUE-PRINTING AND ISSUING FISHING & MOTOR BOAT LICENSES

DEPARTMENT OF STATE-CONTRIBUTIONS TO EMPLOYEES' RETIREMENT FUND

DEPARTMENT OF LABOR AND INDUSTRY-EMPLOYER'S SHARE, SOCIAL SECURITY TAXES





